

Beware of the Human

**1080 Poison: A Plea for Compassionate
Conservation**

Graham Edward Bull

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The Wayfarer's Retreat

ISBN: 978-0-473-65468-9 (POD)

ISBN: 978-0-473-65470-2 (Kindle)

Dedicated to the memory of all those non-human animals that have suffered and died from 1080 poison in humans' quest to master and change our common home to how they think it should be—May all beings be helped in their suffering and pain.

The fear and dread of you shall rest on every animal of the earth, and on every bird of the air, on everything that creeps on the ground, and on all the fish of the sea.

Genesis 9:2

We have enslaved the rest of the animal creation, and have treated our distant cousins in fur and feathers so badly that beyond doubt, if they were able to formulate a religion, they would depict the Devil in human form.

Dean William Inge

New Zealand may be the most nature-loving nation. ... But theirs is ... a bloody, bloody biophilia. ... As the coordinator of one volunteer group put it to me, 'We always say that, for us, conservation is all about killing things.'

Elizabeth Colbert (2014)

Sentient beings must not die because, for conservation officials, acceding to myths, pressures, and exaggerated fears is the easiest and the most opportunistic choice. ... The cruelty can end, and the perception of risk lies at the core of the challenge to achieve peaceful coexistence with carnivores.

Gosia Bryja (2021) (Conservation scientist)

Acknowledgements

Over the years of writing this book, I received much support from my wife, Mee Ying. Max Taylor and Greg Mathews helped by their reading of an early draft. At one point, when I had become bogged down, their encouragement allowed me to get back on track. Thanks to Jamie Steer for giving up his time to read what I thought was the last draft of the book. His comments helped me in the final drafts to become more focused.

I came upon a wealth of inspiring writings when working on this book. Many authors understood the world as consisting of a community of ‘subjects’ rather than isolated objects to be exploited. I am deeply indebted to their thoughts in this area. My reading of an article on apocalyptic discourse by Teresa Heffernan and a reply to a question I asked her, enabled me to better understand the place of apocalyptic narrative in the conservation establishment’s discourse. Her writing returned me to my old haunts—psychoanalysis. A very quick reply (fifteen minutes after I sent an email) from Wayne Linklater in the United States to a question on a quotation I used from one of his articles was appreciated.

I am grateful to Gabriela Jarzębowska, a critical animal studies scholar, for giving her time amidst a hectic life to read the final draft of my book. Her comments were encouraging. Like Jamie Steer, she pointed to the work as being more than just a study of a particular conservation problem in New Zealand. She viewed it as a comprehensive analysis of how we find non-anthropocentric ways of addressing the difficulties that non-human animals can bring us. Gosia Bryja’s writing was very inspiring, and I thank her for granting permission to use several quotations. I also want to thank her for writing the foreword to the book. Her work is a necessary read for a view of our relationships with non-human animals that values partnership, respect and compassion, as well

as an acknowledgement of their subjectivity. As well as being scientific, her writings can serve as meditations on the lives of non-human animals and our relationships with them. Some of her writings can be found on *Omere, Humans and Nature: Changing the Paradigm* (<https://omere.ca/>). In the request to Gosia for her to read the final draft and for some comments on my work, I asked for a couple of sentences but received a very much appreciated one-page review—the foreword. This is exactly what I was wanting, but I had thought would be too much to request. Also, I would like to thank environmental philosopher Meera Inglis for reading and commenting on the ethics chapter, part of which was based on her work.

For about three years I spent one morning a week working at the Citizen's Advice Bureau (CAB) with Brian..... We had many conversations about nature, nonhuman animals, humans and the use of 1080. Brian was a wise and kind man with a passion for books, nature and animals. He told me about his son's relationship with various animals (see Conclusion, p. 140). He also mentioned Gilbert White, an English pastor and naturalist of whom I was unaware. After Brian's death, one of his sons sent me two books from Brian's collection, the classic text *The Natural History of Selbourne* (by Gilbert White [1789] 1947) and *The Life and Letters of Gilbert White of Selbourne* (Holt-White 1901). It was a wonderful gift.

All the above people were willing to read and comment or discuss my work. They renewed my faith in the idea of a community of people able to share their ideas for an important cause—compassion for nonhuman animals, and academia not being just an ivory tower shut off from people outside the establishment.

Sometimes, I became discouraged and wanted to cease writing. But engaging with the various non-human animals who have made their home with us led to a renewed vigour. Witnessing their lives, joys, sufferings and deaths, I saw the need to pass on what they revealed and to give them a voice—hence the sign on the inside of our gate and the title of this book, *Beware of the Human*. As I write, Charity, the offspring of our first two

sheep, is looking through the French doors to see what preoccupies me. I think he would like what I am writing.

Thanks to all the above and others who helped me write on such an important subject.

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Foreword

Beware of the Human sheds light on our distorted relationship with nonhuman animals. It focuses on New Zealand's relentless war on possums, rats, and stoats, with the goal of their complete eradication by 2050. Graham Bull's unique background and expertise - ranging from social sciences, philosophy, and psychoanalysis to religion studies - offers a holistic approach that allows for a nuanced probing of humans' interactions with other living beings. The story that emerges from the book is one of cruelty and suffering. In the name of conservation, we have stained the landscape with blood and filled it with the sound of anguish. Also, in the process, driven by the anthropocentric and mechanistic mentality, we have stripped the living world of its timeless wonder. The complexity and the intricacy of natural relations have vanished, replaced by the reinvention of nature as a heartlessly managed place with no room for 'pests', 'predators', or 'invasive species'. In such a world, the author argues, nonhuman animals have become expendable, the richness of their lives shrunk and categorized as 'matter out of place'. Sadly, the voices of those opposed to the carnage remain unheard. This is not surprising, of course. As long as the arbitrarily defined ecological "paradise" persists, nothing else will matter. But, of course, the lives of all sentient creatures do matter, should matter. If one suffers, 'why would not one offer a hand?', Graham Bull asks. In its search for a kinder relationship with nonhuman animals, the book offers such a helping hand.

It achieves it through an ingenious merging of complex content and clear presentation. The author takes us on an in-depth journey that challenges our anthropocentric mentality and reveals our turbulent relationship with nature through an array of perspectives. One crucial lesson becomes evident: it is not science alone and our worshipped technology that will right the wrongs and offer salvation to human and nonhuman coexistence. On the

contrary, the mechanistic and instrumental view of nature that praises efficiency and strives solely to maintain a “primordial harmony” must be questioned. We allow the slaughter to continue because we champion science as an objective guide without realizing that science is a value-laden endeavour. Socio-cultural, political, economic, and ideological factors underpin any scientific pursuit and colour it with biases and assumptions. This is inevitable; this is unavoidable. That is why, instead of accepting the illusory objectivity of science, Bull argues that we need to merge science with ethical values imbued with compassion and empathy. Compassionate conservation offers a template for such a merger. It does not diminish the role of science, as some would claim, but instead seeks out alternatives untainted by pain and suffering.

Finally, if there is one overarching theme that coalesces various aspects of the book, it is the call for a profound change. Bull champions a belief in change and the recognition of nature’s soul. In his view, conservation precludes cruelty because preservation and annihilation are antithetical concepts. Instead, ethics and the intrinsic value of an individual nonhuman animal need to be at the core of any decision determining the fate of living beings. Only then will sufficient means be made available to develop innovative and compassionate solutions; only then the horrors in the forests will cease.

Dr Gosia Bryja, (Environmental & wildlife conservation scientist, compassionate conservationist, British Columbia, 2020)

Introduction

Several months after we moved to our country home, a pest control officer visited us. He wanted permission to place a bait station on our property to catch possums. As I could not produce any good enough reason why I should not give permission, I agreed. After all, possums seem destructive, and the fruit trees bore signs of their visits. But I did not realise at the time that bait meant poison rather than something that lured the possum into a trap. After the officer set up the bait station, I never saw him again. Inspecting the stations did not seem to be a part of his duties as a pest control officer.

After the person left, I discovered a notice attached to our gate with a skull and crossbones symbol on it. It warned that brodifacoum, a poison, was present on the property. Such a warning gave the place a menacing tone as if it were under siege. In contrast, I was aiming to create a sanctuary where people and animals might dwell together for a while. Soon after the visit, I felt uneasy about having poison on the property, so I removed the bait station and the notice attached to the outside of the gate. Instead, I attached a notice on the inside of the gate—*Beware of the Human*.

In the following years, I became more familiar with the conservation policies of the Department of Conservation (DoC) and Janice Wright, Parliamentary Commissioner for the Environment (2007–2017), including their concern for biodiversity, and native bird and plant loss. In addition, I became familiar with the New Zealand predator-free 2050 campaign. This campaign calls for a war against pests such as rats, stoats and

possums. A central feature of this war involves using sodium fluoroacetate, a poison known as 1080 (Wright, 2011, 2017).

As I learned about conservation in New Zealand, killing animals appeared to be a central part of its work. The authorities even encourage ordinary New Zealanders to take part in this killing (Tulloch, 2017). For Pys Gruffudd, a geographer, killing possums and other 'predators' has become an aspect of a New Zealander's identity. We find an example of this 'killing mentality' in a DoC worker's comment: 'It was in Kiwi's psyche to run over animals on the road because they were usually possums' (Gruffudd, 2011: 228). Despite the idea that killing predators has become part of a New Zealander's identity, I had never come across it as a core New Zealand value.

Although I sometimes reluctantly use traps to catch rodents, this is mostly in the winter, when rats or mice are more likely to enter the attic to find shelter. I used traps for the first time after a rat chewed through a water pipe in the attic, causing the water to leak through the ceiling. However, I never persisted in this endeavour of using traps. To solve the problem, all I did was kill a few rats and mice each year. Nonetheless, I once bought rat poison, assuming rats would die immediately after ingesting the poison. But, after reading about the time it took for the rat to die and the suffering it caused, I decided not to use it.

When I caught mice and rats, had my first lambs killed, heard about beekeepers killing their queens yearly to get stronger hives, and read about DoC's use of 1080, I wondered about where I lived. Had I settled in a beautiful place in the countryside, or had I taken a wrong turn and entered the killing fields, where people assume they have the right to kill animals for their own benefit? I asked myself, 'Do animals not also have interests and rights that we should respect?' Do we not have duties towards them?

Still, life in the countryside has helped shape my view of the environment or the 'common home' we all live in, humans and non-humans alike. Living with the sheep, chickens, dogs, the varied birds that make their home here, and the few rabbits that keep the dogs on their toes, makes for a delightful place to live. Of course, sheep, cattle, chickens, rabbits, and some of the birds in our garden are not conservationists' favourite animals. Even so,

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they help me connect with the world that we all belong to. Furthermore, I question whether we can show a genuine interest in the charismatic animals that conservationists want us to value if we cannot show interest in the ordinary but captivating animal life around us.

Before moving from the city, I worked as a psychotherapist in a hospital for teenagers. I studied philosophy, social anthropology, religious studies, theology and psychoanalysis, all of which helped me in my work. My doctoral thesis at University College London was in medical anthropology. A primary aim of this subject is to show that medicine and healing encompass more than what medical scientists consider essential. Social and cultural factors also play a role. In my research, I investigated spirit mediums who believed themselves to be possessed by gods, enabling them to heal people (Bull, 2015). This phenomenon occurred within a culture well known for embracing modernity and science. Various people, despite sometimes consulting mediums, considered them to be charlatans, unscientific and even mad. This is how anti-1080 people are often viewed in New Zealand. However, in my research on mediums, I focused not on whether they could be possessed and heal people—a factual matter—but on the role, this phenomenon played in society. Despite a belief that mediums were mad, I discovered that there was a logic, purpose and value to what they were doing.

Since moving to the country, I have become more aware of the suffering experienced by nonhuman animals. Some of this is caused by humans, such as that caused by the use of 1080 poison. Like the situation of spirit mediums, I discovered that more is involved in the question of 1080's use than just scientific concerns, such as whether it is effective or not. These other concerns are the subject of this book and include the questions asked before: Do nonhuman animals have rights and interests and do humans have duties and responsibilities towards them?

Disciplines Drawn On

In New Zealand, flawed policies to exterminate entire species from our nation are revealing just how important it is that

psychology, sociology, history, and ethics, as a few examples, take a greater role in environmental debate and policy.

David Munro, Jamie Steer, Wayne Linklater (in Bekoff, February 18, 2020)

Various disciplines inspired and influenced my ideas about 1080 poison. These included religious studies, theology, philosophy (particularly ethics), the social sciences and newer disciplines within the natural sciences, such as compassionate conservation. Sadly, much of what I came across is unknown to many 1080 advocates and the general population of New Zealand.

The first discipline that I consider helpful in my analysis of conservation and 1080 poison is religion. Some people consider that nature is sacred and needs to be respected. Ideas like this can be classified as religious or spiritual and observed in religions like Christianity, Buddhism and Jainism or movements like deep ecology and Romanticism. This viewpoint can be found in people like John Muir and Aldo Leopold, who are regarded as the founders of modern environmentalism. For example, in the preface to the classic work *A Sand County Almanac*, we find spiritual sentiments when Leopold speaks of the land needing to be loved and respected (1970: xix). Also, we discover these sentiments when he writes of two spiritual dangers in not owning a farm; one, ‘supposing that breakfast comes from the grocery’ and two, supposing ‘that heat comes from the furnace’ rather than from cutting, splitting and hauling the cut wood to the house (1970: 6-7). John Muir, Henry David Thoreau, Peter Ouspensky and Albert Schweitzer all influenced Leopold, among others. Spiritual concerns had helped shape their views on nature (Pryor, 2011; Lauzon, 2017).

However, religion for some is associated with formalism, dogmatism and opposition to rational, empirical and scientific thinking. Nevertheless, in a more post-humanist and post-secular era that questions modernity, this dichotomy of secular and religious is no longer valid, as the term ‘religion’ itself does not possess any precise definition. The theologian Tillich, for instance, defines religion as what is of ‘ultimate concern’ for a person, and since most people hold something to be of ‘ultimate

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concern', to that extent, they can be understood as being religious (Tillich, 1964: 7-8).

Still, environmentalists and conservationists should be interested in religion (and social science) because most people acquire ideas about the world from groups they identify with. These include families, communities, schools, religious groups and political parties. Another reason is that religious beliefs derived from Christianity can be seen to have influenced conservation and environmentalism. We have already mentioned Aldo Leopold being inspired by Albert Schweitzer, the German medical doctor, musician, philosopher, theologian and pastor. Another example is Gilbert White, the 18th century pastor and naturalist who has influenced many and is considered one of the fathers of ecology.

The view of Lynn White, historian of medieval science and technology, is of even more importance for the influence of religion on conservation. His views are found in his classic work, 'The Historical Roots of our Ecological Crisis' (1967). Here, White argues the Biblical concept of dominion (found in Genesis) led to the Baconian idea of scientific knowledge as 'technological power over nature', resulting in our current ecological crisis. Even if this view were only half true, it would be a sufficient reason to examine religion and its relationship to environmentalism, conservation and science.

Furthermore, the need to go to our religious traditions to understand our environmental philosophies would be the case in New Zealand, where the Indigenous Māori people often express their environmental views through their traditional theology and mythology. See the New Zealand Journal of Ecology article: 'Ka mua, ka muri: the inclusion of mātauranga Māori in New Zealand Ecology' by Wehi, Beggs and McAllister (2019). Two other examples of writing on this subject are 'Western and Māori Values for Sustainable Development' by David Rei Miller (accessed 19 Oct. 2020); and John Patterson (1998) 'Respecting Nature: A Māori Perspective'. In this last work, there is the idea that 'we should respect all creatures', as there is a life force, 'mauri', that unites us all and limits human domination of nature

(1998: 69). That spirituality is at play in Māori attitudes towards the environment is increasingly accepted. That spirituality also exists in non-Māori peoples' attitudes to nature gets little recognition.

Because of this almost causal connection between religion and science, Lynn White concluded that science and more technology would not solve the ecological crisis. For him, we must either 'find a new religion or rethink our old one' (1967). In Chapter 4 on science, Chapter 5 on our concepts of nature, and Chapter 8 on religious allusions, we see more about how Christianity has influenced our approach to nature and possibly our attitude towards 1080 poison.

While religion is only one field of study that can help us examine conservation and environmentalism, other subject areas can also be of assistance. As seen in the quotation at the beginning of this section, Munro, Steer and Linklater call for multidisciplinary involvement in discussions of conservation policies. Marc Bekoff, biologist, ethologist, ecologist and former professor of ecology, also calls for multidisciplinary involvement in conservation policies aimed at exterminating nuisance animals. He sees these discussions as involving biologists, psychologists, social workers, sociologists, political scientists, journalists, religious scholars and philosophers (2013: xvii). Bekoff in mentioning Lynn White says that 'science alone doesn't hold the answer to the current crisis' and that what is needed is more empathy and compassion (2013: xvii). In the same vein, Wayne Linklater (professor of environmental studies and previously an associate professor of conservation science at Victoria University, NZ) emphasises that it is not the role of conservation to decide on the use of 1080, for it is a moral decision. In his opinion, the values and vision of a more diverse group of people should guide scientific inquiry. For him, biological research on 1080 use should have less of an input in resolving the conflict over 1080 than social science research (2019). Because of the complexity of the matter, we are dealing with—1080 and predator control—I agree with Bekoff and Linklater and attempt to provide a broader approach to the subject than is usually provided.

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A second area of significant importance in looking at our question about the use of poison in conservation work is that of philosophy. Philosophical analysis can help evaluate an argument's logic and foundations. In Chapter 4, I employ a philosophical approach to examine the nature of science and facts, terms that are thrown around a lot in 1080 discussions. A subdiscipline of philosophy is ethics, a study centred on the 'good life' and how to live it—through moral awareness and right behaviour. Within philosophy, a new discipline, environmental philosophy, emerged in the 1970s. This subject concerns the definition of nature, its value, humans' place within nature and the ethics of various ecological practices. While ethics is implicit in all our actions and the values we hold, the study of ethics is a more formal, deliberative endeavour. Outside of philosophy, we rarely refer to formal principles of morality.

Modern animal welfare ethics and animal rights concerns developed at the same time as environmental philosophy. Peter Singer (1975), Andrew Linzey (1976), a theologian, and Tom Regan (1983) were all pioneers in these areas. Singer's 1975 book *Animal Liberation* is widely regarded as the first text on nonhuman animals in modern ethics. If conservation is about killing animals, even if it means helping endangered species, ethical principles and arguments need consideration. We should do this before using poisons and other methods of killing, not after. Given the lamentable lack of attention to ethics in writing about 1080, in *Beware of the Human*, ethics is strongly emphasised. In Chapters 6 and 7, I discuss ethical issues and the allied subject of compassion.

The third area of importance to conservation and the use of 1080 is that of the social sciences, in which I am trained. The social sciences have much to say about the nature of science, conservation and the socio-cultural context in which these subjects exist. So, we have Michael Soulé, considered the founder of conservation biology, writing that conservation is dependent on the social sciences (1985: 727). We also notice Linklater (2019) and Bekoff (2013) calling for social science involvement in conservation matters. Despite this, few people who agree with

1080 use are requesting social science research. On the contrary, most people assume only scientists should comment on the issue of using poison. One example of a call for social science research on this subject appears in scientists James Ross and Charles Eason's article (2021: 40). They refer to writer and science reporter David Hansford's (2016) work, *Protecting Paradise: 1080 and the Fight to Save New Zealand's Wildlife* when making this call. Yet, Hansford encourages social research to investigate 'why people choose not to trust science and why they choose instead to invest in mythology' (Harvie, 2017). Thus, the advocacy of social science research here is not aimed at understanding the 1080 conflict but is more of a marketing effort to entice people to accept the conclusion already reached. My contribution to what anthropology can add to our understanding of the 1080 issue can be observed throughout the book, particularly in Chapter 3.

When I studied anthropology, it was concerned with humans. This made it, like other subjects, an anthropocentric discipline, encouraging, even if inadvertently, a view of humans' overriding importance in the world. Despite this emphasis, significant developments have occurred more recently in anthropology and other social sciences, pertinent to our interest in 1080. Multispecies ethnography and the 'more than human' approach are such developments.¹ These advances have shifted the social sciences away from only being concerned with humans.² Other fields within the broad title of 'more than human approaches' include environmental humanities and human-animal studies.

We notice an example of multispecies anthropology in anthropologist Helen Kopnina's (2017) work, 'Beyond multispecies ethnography: Engaging with violence and animal rights in anthropology'. In the article, Kopnina moves beyond just advocating for a multispecies anthropology. She advocates for a more activist approach, speaking up for nonhuman animals who are victims in situations where institutional violence is taken for granted and not questioned. This work seems pertinent to the issue of using 1080 poison in conservation.

We find another example of multispecies anthropology in the essay titled 'Multispecies Studies: Cultivating Arts of

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Attentiveness’ written by the anthropologist Thom van Dooren and two geographers, Eben Kirksey and Ursula Münster. They describe developments in the social sciences as ‘novel ways of engaging with worlds around us’ and opening up ‘new understandings, relationships, and accountabilities’, which help us in ‘paying attention to the diverse ways of life that constitute worlds’ (2016:1). The authors ask, ‘how can we do the work of inhabiting and co-constituting worlds well?’ And they explore what ‘cultivating the arts of attentiveness’ would mean—‘paying attention to other beings and ‘crafting meaningful responses’ (2016: 1). Such developments move beyond traditional behavioural approaches that consider the beings of a study only as objects for human examination and manipulation.

Anthropologist Deborah Bird Rose’s (2008) article, ‘Judas Work: Four Modes of Sorrow’, gives us yet another poignant example of an approach that is ‘more than human’. Central to this work are feral donkeys in Australia. In this paper, Rose draws our attention to the subjectivity of donkeys, allowing us to see donkeys as subjects with their own dignity and sadness.³

Unfortunately, these nuanced approaches to understanding our relationships with non-human animals are not discernible in DoC’s work regarding possums, rats and stouts. Animal subjectivity is ignored in DoC’s work and much writing on 1080 and the ‘pest’ problem. Only the contribution of a group of ‘native’ animals to an ideal of what a healthy ecosystem should be like is valued. Thus, we discover a paper, ‘The effects of single aerial 1080 possum-control operations on common forest birds in the South Island, N.Z.’ by ecologist Josh van Vianen et al. (2018) in the *New Zealand Journal of Ecology*. The paper gives a great deal of detail on how the researchers conducted their four-year study and a detailed statistical analysis of the results. Results mentioned include possums decreased in treated sites, as did rats (at least for a year), no adverse effects of 1080 occurred for birds and three bird populations increased in size in treated areas. The article concludes that 1080 had conservation benefits and that the study added to the view that aerially applied 1080 is one of the safest and most cost-effective methods for managing the

environment (2018: 176). However, no attention is given to welfare, ethical concerns or the lives of the animals killed. The study just assumes that the use of 1080 is justified based on the study's results and that welfare concerns do not outweigh conservation concerns.

But more interesting approaches in the natural sciences exist, like those described above in anthropology, philosophy and religious studies. In 1934, Jakob von Uexküll, a biologist, published pioneering research on the subjectivity of animals in his book, *A Foray into the Worlds of Animals and Humans*. His primary concern was the inner world of living beings, their experience, and how they perceived the environment in which they lived. In his view, animals have a purpose and goal in their actions rather than just being mechanistic automata that follow invariable physical laws. Another person who has contributed much to our understanding of the subjectivity of nonhuman animals and the emotional and cognitive aspects of their lives is Marc Bekoff. He has also written on 1080 poison. In his writings, he stresses the importance of ethics and values.

'Welfare Biology' is another natural science that concentrates on animal welfare and whether humans should help them when they suffer. There is also the new discipline of 'critical animal studies'. Anthrozoologist and animal activist Margo DeMello defines this subject as an 'academic field of study dedicated to the abolition of animal exploitation, oppression, and domination' (DeMello, 2012: 5). An example of such a work in this field is critical animal studies scholar Gabriela Jarzębowska's (2018) work on rats. This is a necessary read, as apart from psychological studies on rats often carried out in an intrusive manner, few non-anthropocentric writings on rats exist that do justice to their lives.

Compassionate Conservation

Last, we have the new paradigm of compassionate conservation that started to develop at the end of the first decade of the 21st century. The discipline is interdisciplinary. It is based on the core idea of conservation—preserving species and the environment. Nevertheless, compassionate conservation does not accept

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Soulé's central principle, which accords intrinsic value only to ecosystems or species rather than the individual. Individuals also have intrinsic value and, thus, moral standing in compassionate conservation. Four fundamental principles that incorporate the virtue of compassion and inspire the movement are: do no harm, individuals matter, inclusivity and peaceful coexistence (UTS, 2019). Of course, this movement is a major contributor towards more compassionate conservation, but it does not have a monopoly on compassion. All can contribute to this venture. Nevertheless, we can learn a lot from the writings coming out of the group. Well-known early proponents of this conservation modality were Jane Goodall and Marc Bekoff.

We observe three examples of compassionate conservation in the following: First, in a review of 'Talking with Bears: Conversations with Charlie Russell by Gay Bradshaw', Gosia Bryja (2021) recounts Charlie's relationship with bears. She speaks of the physical and spiritual landscape Charlie inhabited and the 'oneness, harmony, wonder, kinship, and love' regarding his relationship to the earth and other creatures to which we should aspire. And remember, Bryja is a conservationist. She invokes philosopher Walter Benjamin's phrase, 'the natural prayer of the soul'—which is 'attentiveness'. Charlie's life, she says, contained wonder, kinship, communion with nature and love. She notes that 'we can listen to Bears' voices, feel their warmth, their kindness, but we also hear them weep and roar in pain' (2021). While Bryja says the book is about peaceful coexistence with grizzly bears, the book and her review illustrate more than this. The writings demonstrate that conservationists do not have to limit themselves to an objective, dispassionate and technical view of the animals they work with. They can embrace ideas of relationship, acceptance, harmony, attentive presence and compassion.

Second, in 'Wildlife Management: When Forest Wails and Mourns' (2019), Bryja describes how the killing involved in conservation by trapping, hunting, poisoning to death, and gunning down from helicopters diminishes us as human beings and takes away from the appreciation and compassion for the natural world built up by humans over numerous centuries. She

writes, ‘What remains hidden from all of us, living far away from the land of the wolf, is individual suffering to which, through our political indifference, we implicitly consent. What we do not see is paralyzing anguish, pain, and psychological trauma’ (2019). Bryja mentions this for wolves in British Columbia, but I would say the same about the poisoning of possums, rats and stouts in New Zealand.

Third, we can witness another moving example of compassionate conservation in ecologist Arian Wallach’s presentation, ‘Feminist Ferals’ (2018). Here, we observe not just whether the method used to control wild donkeys reduces their number but how the approach to ‘the problem’ of wild donkeys—killing them—encompasses other crucial issues. These issues include an implicit chauvinistic attitude and biodiversity accounts that do not include ‘introduced species’ in their definitions of biodiversity. When we hear the presentation, we perceive the subjectivity of the donkeys labelled as pests in a way that touches our own subjectivity. Moreover, it liberates us from a false ‘objective’ view that presents the means of killing as an efficient tool. In contrast, Wallach presents the method used to control donkeys as pathological. She shows how the donkey, which has existed in Australia since 1866 (longer than many Australians), is treated as a ‘predator’ and ‘invasive species’—they are shot at, trapped and poisoned. Wallach describes how sometimes a Judas Donkey, all wired up, is used to lead humans to where other donkeys congregate, and then they are killed: ‘She will witness her friends being killed over and over again until she is left alone to be shot last’ (2018: 4.30). Wallach then asks, ‘How did conservation develop to regard such atrocities as benevolence?’ (2018: 4.37).

Likewise, we can ask a similar question of conservation in New Zealand: How on earth has conservation developed to relying on the poison 1080 to control unwanted animals and understanding this as ‘killing with kindness’? (See the article, ‘Killing with kindness’ by DoC’s endangered species ambassador Nicola Toki (2017).⁴

What the Book is About

In the above, we have seen what has influenced my ideas about 1080 and assisted me in formulating an alternative view of 1080, one that considers animals' subjectivity as being important. It is about human-nonhuman animal relationships, our responsibilities to nature—both to the physical world and to those we label 'pests', and how we ought to conduct ourselves when a conflict arises. The book is also about the nature of science—the subjective side, the social and cultural context in which science works, and how facts are produced. Above all, the book is about whether using 1080 is right or wrong and the role of compassion in conservation.

We live in the postmodern, post-humanist and post-secular era, where we realise that much good came from the modernist viewpoint arising from the 'enlightenment'. Nonetheless, many negative features also arose—the rise of scientism, facts becoming disconnected from feelings and the sacred being relegated to religion. Disenchantment and a technical, mechanical view of the world arose where, lacking any sense of divinity, humans themselves became gods. However, the facade of modernism has been crumbling for some time, revealing a dark underbelly on which we have built society—the alienation of labour, alienation within ourselves and alienation from the natural world. This last aspect has led to human tyranny over non-human beings, whether in animal testing laboratories, industrial farming or the killing fields of New Zealand laced with poison. As mentioned before, science alone cannot solve the problems associated with such actions. Taking on such a task requires a multidisciplinary approach that considers the science we employ, the cultural and social contexts in which the science and its attendant problems have grown, our ethical system and what we hold sacred. I attempt to provide this.

The book, then, dealing as it does with our relationships with nonhuman beings through a study of 1080 use in New Zealand, could interest a broader group of people than just New Zealanders. To be sure, the book's ideas are essential to those interested in conservation and the treatment of animals, as well as

Beware of the Human

to those working in conservation. However, this book is of far greater importance to the animals being poisoned, who live and die at the command of what they might consider the predator animal par excellence—human beings. They are, in the end, whom I am writing for—hence the title, *Beware of the Human*.

Our Forests and Birds are under Attack: Our Weapon, 1080

Si vis Pacem, para Bellum

It's time to call out New Zealand's war on wildlife firmly, but nicely. 'Killing with kindness' is an oxymoron, the language of hate appalling, and where have welfare and conservation groups gone?

Marc Bekoff (2017:1)

Various countries over the centuries have taken up the above Latin proverb, 'If you want peace, prepare for war'. Some have rephrased the saying as 'If you want peace, make war'. Making peace through war has provided a way out of problems (or a way into more problems) for some countries over the centuries. Unfortunately, we see in New Zealand conservation the application of the above proverb in the protection of specific animals by declaring war on others. This has resulted in a massive killing campaign that seems never-ending.

Our forests are under attack

A chapter in the Parliamentary Commissioner for the Environment's 'Evaluating the Use of 1080' contains the heading 'Our Forests are Under Attack' (Wright, 2011: 13). There is a subtitle in another chapter: 'Are we losing the battle?' (2011: 32). The battle is for New Zealand's 168 native bird species, 93 of which are unique to the country (Wright, 2017: 5). Because of New Zealand's isolation from other countries, birds adapted to the lack of predators. Some lost their ability to fly. Now, approximately 20 per cent of these 168 birds are in reasonable condition, and about a third are in danger of becoming extinct

(Wright, 2017: 5). According to the report, the most significant threats to their existence are possums, rats and stoats. Mice, ferrets, weasels, hedgehogs, cats, dogs, deer and wild pigs are also mentioned. Some destroy the birds' habitat while others attack the birds or eat their eggs (Wright, 2011: 15; 2017: 5, 54, 57–64, 74).

The 2011 document labels the possum as the primary cause of the decline of native trees such as pōhutukawa, rewarewa, kāmahī, māhoe, tawa and rātā. Possums are also accused of eating invertebrates, eggs and offspring of birds, such as tītī, kāhu, pīwakawaka (fantails) and tāiko (Wright, 2011: 15). Over thirty million possums are said to exist (Wright, 2011: 15). With regard to rats, they are said to consume not only vegetation but also bird eggs. And stoats, which also eat eggs and young birds, prey on both rats and mice (Wright, 2011: 5, 18). The Department of Conservation, the Forest and Bird Society and former Prime Minister John Key state that rats, stoats and possums kill 25 million birds a year (Daly, 2019). However, the figure does not seem to be based on solid evidence but is a rough estimate.⁵ As well as the predators mentioned above preying on native birds, native species are also affected by 'invasive plants' such as lupins, broom, willow, poplar, gorse and wilding conifers. These plants crowd out nesting sites while also providing cover for predators like feral cats (Wright, 2017: 104).

Various schemes were established to deal with the above conservation problems, many invoking war metaphors to describe the work of getting rid of predators. One organisation, the Predator Free New Zealand Trust, was founded in 2013 to support predator control groups and individuals wanting to control predators. In 2014, the Conservation Minister, Nick Smith, launched New Zealand's most extensive predator control campaign: 'The Battle for Our Birds Programme'. A significant emphasis in the campaign was placed on the use of 1080 (SCOOP, 2014).⁶ Later, in 2016, an even more extensive campaign with grandiose pretensions was established: the 'Predator Free 2050' campaign, aimed at ridding New Zealand of all mustelids, rats and possums by 2050.⁷ Sir Robert Fenwick (who served as chair of the Predator Free NZ Trust), using both a

religious and a war metaphor, referred to the campaign as a 'predator-free crusade' and a 'project born in a leap of faith' (Fenwick, 2017). In a video presentation, we see Fenwick declaring a call to arms to protect our country' (Fenwick, 2018). In addition, pro-1080 advocate Dave Hansford (2016) also draws on war imagery observed in his chapter titled 'Choose your Weapon', where he describes a revolutionary type of trap, the Spitfire, named after a weapon, used during the Battle of Britain (2016: 237).

While most conservationists and ecologists support removing many of the predators mentioned above, a few believe that getting rid of all predators will not work. For instance, Linklater (2017) authored an article, 'Predator Free 2050 is scientifically flawed'. Both Linklater and Steer authored an article where they described the policy as flawed on several levels: 'technical, financial, social, ecological, and ethical' (2018). For former Landcare scientist John Parkes, aspects of the predator-free vision seem more like hallucinations than achievable goals (MacDonald, 2013). And Bekoff describes the killing for conservation as based on 'iffy science' (2017, July 11). While many conservationists concentrate on animal predators as the cause of biodiversity loss in New Zealand, Linklater and Steer point to habitat loss, pollution and urbanisation as the leading causes of biodiversity loss (2018: 4). If true, why has so much emphasis and media coverage been put on the destruction caused by predators? The paper's two authors also point out a lack of concern for more compassionate approaches to solving the problem (Linklater and Steer, 2018).

Since a war metaphor is used to explain DoC's work with 'pests' and 1080 is portrayed as a weapon, it makes sense to examine this pest control method as one would a conventional war. Scientist Michael Morris makes such an analysis. He argues that using 1080 is unjustified (2020). Linley Tulloch, a sociologist, defines the use of a war metaphor as ideology and dogma (2017). And Steer understands the framing of conservation's relationship with rats, stoats and possums as a war to be infantile, propaganda and malicious (2016a). He says, 'These species actually have no concept of what we are plotting against them, let alone the

capacity to consciously fight back'. What we do to these animals is, he says, not a battle or a fight but an extermination, massacre or pogrom. Instead of involving ourselves in a war mentality, he calls on us to show responsibility, respect and kaitiakitanga [guardianship, protection] (Steer, 2016a).

1080-Our Weapon of Choice

One of the primary weapons in the war against predators is 1080 poison. This is a chemical compound called sodium monofluoroacetate, also known as sodium fluoroacetate. Like other aspects of 1080, the name given to it is contentious. Thus, those who support 1080 often use the term 'fluoroacetate' to name the poison and understand it to be the same as that found in some plants, including tea leaves. This understanding leads to viewing 1080 as natural and spreading the poison as something nature does anyway. For example, on the '1080: The Facts' website, 1080 is described as the salt form of fluoroacetate found in various plants (Forest & Bird, 2018). On the other hand, those who oppose the poison tend to use the term 'sodium monofluoroacetate' and the label 'fluoroacetate' for the chemical occurring in plants. Using this term, they stress the difference between synthetic 1080, produced through an industrial process, and 1080 found in nature. For instance, in her book, *The Silent Forest*, former professor of medicine, Fiona McQueen, writes that sodium monofluoroacetate is the correct chemical name for compound 1080 (2017: 9, 16). Likewise, chemist M. L. Jarman (2007) argues against the idea of 1080 being a 'natural' chemical and says the correct name of the synthetic chemical compound is sodium monofluoroacetate, while the name of the chemical found in some plants is fluoroacetate. In the discussion, where the name can suggest whether the object is natural or non-natural, perhaps the journalist Hayden Donnell is correct when he calls 1080 a semi-natural product (2018). But what is certain is that the 1080 we use in New Zealand does not grow in our paddocks but is manufactured. The poison was first synthesised in Belgium in 1896, patented in France in 1927 as an insecticide, and used as a rodenticide during World War II. Over 80% of the world's supply is used in New Zealand (McQueen, 2017: 13).

1080 is described as a ‘vital weapon’ in the ‘war’ against possums, rats and stoats in a document published by the Parliamentary Commissioner for the Environment (Wright, 2017: 16). The writer adds, ‘It is also vital to recognise that aerial application of the toxin 1080 remains indispensable for the foreseeable future’ (2017: 5). And Hansford says, ‘In many ways, 1080 is the ideal weapon, taking out a host of pests in one hit’ (2009). We also find the idea of 1080 as a weapon in the title of an article in the NZ Herald (Morton, 2018): ‘One-two 1080 punch promising weapon in war on pests’. However, given the continued use of a war metaphor with 1080 labelled as a weapon, it would be appropriate to label the poison as a weapon of mass destruction. This is how Bob Kerridge (ex-SPCA director) (2018) and human-animal studies scholar Nicholas Holm (2015: 43) refer to it.

Most pro-1080 writing follows the same approach as in the reports by the parliamentary commissioner for the environment mentioned above. After describing the problem, the authors answer questions about 1080 and conclude that 1080 poison provides the solution. Though a few might note the ethical issues associated with the use of poison, they do not give sustained attention to this matter. We can see such an approach in James Ross and Charles Eason’s review of publications over the previous ten years on 1080 (2021). The authors discuss 1080’s mode of action, natural occurrences, toxicology, poisoning incidences, metabolism, the risk to non-target species, ecosystem outcomes and cost benefits, all which interest people. The review’s main conclusion is that 1080 ‘is still considered to be the only practical and affordable approach to address the threats to conservation and agricultural production’ (2021: 4). Descriptions of poisons compared with other poisons take up much of the paper, while welfare concerns take up one page out of forty-four (2021: 24). No discussion of ethical issues appears. A point is made, though, in the report that reducing by-kill (unintentional killing) is important to recreational and subsistence hunters (2021: 38). We could add that reducing by-kill is also vital for those animals labelled as such. While the authors mention that welfare research needs to be increased and that they have addressed

welfare issues in their 2017 paper (Eason, 2017: 24), their lack of attention to this topic suggests ethical and welfare concerns are not important enough for a major report on 1080. These concerns appear secondary to topics such as cost-benefit issues, harm to agriculture and by-kill.

Even when we examine Eason et al.'s 2017 paper, it still follows the same format as the 2021 report. The authors mention in the introduction that the use of pesticides should continue, but that the issue of the humanness of toxins needs consideration (2017: 267). However, like the subsequent 2021 report, welfare concerns get little consideration. Over a quarter of the paper lists various toxins, describing how they work and the time until death. Under the heading 'Sodium fluoroacetate', mention is made of the presence of a debate on the welfare aspects of 1080, but not much more. The authors state that 1080 is not as humane as poisons such as PAPP [Para-aminopropiophenone] or cyanide but is considered more humane than many other toxins, including strychnine or anticoagulant poisons (2017: 271). The rest of the paper discusses the safety aspects of different control methods, innovative technology, more effective lures, secondary poisoning and efficiency. The writing style is objective, factual and formal, sometimes to the point of being Pythonesque. Thus, in discussing the poison cholecalciferol, used to kill rats and possums, the authors note, 'Following oral gavage of cholecalciferol concentrate at 2000 mg/kg, there were no adverse effects in ducks' (2017: 273). But 'chickens and canaries were more sensitive, with some deaths after being dosed at 2000 mg/kg' (2017: 273). So, the poison was given to chickens, ducks and canaries. I wonder what they did wrong to deserve this. But maybe having the poison used against them was in the best interests of the chickens, given that humans have made life hell for them. Additionally, the authors describe a method of killing coyotes with cyanide using an M44 mechanical ejector: 'When the top is pulled by a predator, the device ejects cyanide into the mouth of the animal' (2017: 274). I suspect the experimenters found observing such a process of considerable interest.

Nonetheless, while I appreciate that science must, at times, be written in the above manner, I find the conservation writings of

Bekoff, Bryja and Wallach more informative and more descriptive of the animals they work with, whose world is the same as ours. What stands out in the writings mentioned above and in writings in favour of 1080 is the idea that 1080 poison should be used to protect the native birds of New Zealand. Often, the idea that it 'should' be used, in the sense that it is the 'right thing' to do is assumed, but it is rare to see an ethical argument for its use. Such arguments, though, on 1080 and other questions of conservation can be observed in the writings of conservationists such as Bekoff, Bryja, Wallack, Steer and Linklater. Unfortunately, these conservationists get little mention from 1080 advocates.

In writings on 1080, frequent questions asked are: Is 1080 a natural entity? Does 1080 kill native birds, insects and fish? Is it dangerous? Does it break down in water? Is 1080 necessary to protect cattle from tuberculosis? Does 1080 get rid of pests? Thus, on the Forest and Birds' Fact Sheet and FAQs (which suggests the fact sheet separates facts from non-facts), mention is made in an answer to a question about the effects on predator numbers of using 1080 that it reduces the rates of possums and rats by up to 95%, thus allowing birds to flourish (2018). Given this answer and answers to other such questions, the conclusion that we must use poisons to protect our natural world would seem to be something that no reasonable person would question. However, people do question it. As we have seen, Bekoff questions it. In 'It's OK to Kill Animals Humanely, Apology Doesn't Work' he mentions 'New Zealand's aggressive and violent war on wildlife using poisons such as 1080 and other brutal methods' (2018). Jane Goodall says, 'There are more humane ways of dealing with invasive species than applying 1080' (O'Callaghan, 2019). And two New Zealand scientists, Fiona McQueen and Jo Pollard, provide alternative answers to some of the above questions. For McQueen, the number of rats and possums may fall after applying poison, but the same number, if not more, may reappear in one or two years. Also, as she points out, stouts, lacking rats to eat, destroy even more birds (McQueen, 2017: 194). She gives evidence of birds being poisoned by 1080, some of them the very birds 1080 is trying to protect (2017: 34-44, 67-76). In an article titled, 'Will NZ's

Department of Conservation win against rodents and stoats with 1080 poison?’ scientist Jo Pollard states that the use of 1080 does not work as there has been no significant increase in bird life since the poisoning started (2019). So, we see that there is sometimes more than one answer to a question.

The questions remain pertinent and of significant interest to many people. Often, acrimonious debates occur about the answers to these questions. Some consider the answers given as all that is needed to justify using 1080. For example, a member of one online community tried hard to get me to focus on these questions. I wanted to focus instead on the assumptions behind them. For me, the answers to the questions are not the primary factor in determining whether using 1080 is right or wrong. Often forgotten in the discussion are more critical, fundamental aspects. These include our categorising and naming processes involved in labelling animals as pests, predators and invasive species; the question of what a fact is; how we come to know facts; their part in ethical discourse and the development of conservation and ecology with the assistance of certain paradigms. But of most importance are the ethical and value judgments involved in answering the question of the rightness or wrongness of using poison. As pointed out, discussions on the ethical implications of using poison are often lacking, as in the report by Eason and others.

In Eason et al.’s paper, considered above, there is a brief mention of ethical concerns (2017: 268). Even so, the statement refers to Hansford’s work as if turning to his work would give us a more in-depth discussion of welfare and ethical concerns. However, that is what we do not get in Hansford’s writings. What we find is a denial of the importance of ethical thinking regarding 1080 and an overestimation of the ability of science to show us what is the right thing to do to solve the problem of biodiversity (2016: 6-7, 109). Nevertheless, a curious hint can be discovered in his writing, perhaps a Freudian slip, suggesting that more is needed than science to address the problem of 1080. An enigmatic statement appears at the end of the preface to his book, where he says he would prefer not to spread poison (2016: 8). He then quotes a Jesuit priest, Greg Boyle, who works with gangs in

America. Here, Hansford has used an interesting choice of reference, given that he only ever endorses the work of scientists. He writes: ‘Even gang members imagine a future that doesn’t include gangs’. Does this use of the quotation entail the identification of pro-1080 people as a gang who wish to desist from their more negative actions? Also, it is of interest that the title of the book from which he quotes is *Tattoos on the Heart: The Power of Boundless Compassion* (Boyle, 2010). According to the summary on the book’s Amazon page, this book endorses the idea of universal kinship and redemption and ‘reminds us that no life is less valuable than another’ (Boyle, 2010 [Amazon page]). That is exactly what I am arguing for in *Beware of the Human*.

To Give a Dog (or Rat) a Bad Name

*Small, crafty, cowering, timorous little beast,
 Oh, what a panic is in your breast!
 You need not start away so hasty
 With your hurrying scamper
 I would be loath to run and chase you,
 With murdering plough-staff.
 I'm truly sorry man's dominion
 Has broken Nature's social union,
 And justifies that ill opinion
 Which makes you startle
 At me, your poor, earth born companion
 And fellow mortal!*
 Robert Burns, "To A Mouse"

*We once saw a marmot, the spinal cord of which had previously been divided,
 bite a vivisector. ... 'Are they not nasty animals? You have to be careful of them',
 said another vivisector, who was engaged in cutting up mice.*
 Lizzy Lind-af-Hageby & Leisa Katherina Schartau (1903)

Given my interest in dogs, someone contacted me in 2012 about the plight of a 13-year-old boy and his dog. The dog was seized from his home and impounded, where he remained for two months before I heard about the situation. When the incident occurred, the boy was at home alone with his dog. Two dog rangers parked their car outside the house. They climbed onto the bonnet of the car and peered over the fence. After the dog broke into an aggressive bark, the rangers entered the

property, and the dog lunged at them. Meanwhile, the youth grabbed a stick and pointed it at the two men. The rangers then seized the dog and took him away. To clarify the above scenario, I contacted three councillors from the boy's local council and asked them about the situation. One person warned me against getting involved and said he had heard someone was stirring up trouble. After speaking to the councillors, I contacted the local mayor, who agreed that the rangers should not have entered the property without the parents' permission. Soon after speaking to these people, the authorities released the dog.

We may well ask, is this above scenario with the dog just a case of the rangers investigating the situation of a dangerous dog, impounding him, and possibly killing him, all to make the local environment a better place? Yet, in this situation, more seemed involved. For a start, the boy lived in a deprived area with many social problems. All the councillors I spoke to lived in more wealthy areas. One person said that the local government was trying to clean up the area where the incident occurred. During a conversation, one councillor said, 'Don't get me wrong; I'm not anti-dog', and he told me he owned two Labradors. It occurred to me that the dog's impoundment symbolised something else, perhaps a conflict between two communities. In this conflict, if you'll excuse the pun, the dog served as a scapegoat.

As an extension of this analysis, we might speculate that the dog became a totem, representing certain groups or behaviours. Thus, a move against the Pit Bull dog may also be viewed as a move against the community. And just as the dog represented the community where he lived, so did the councillor's Labradors. The Pit Bull represented aggression, while the Labradors represented friendliness and openness to all—how the councillors wished to be perceived by others. As a result, we can see the dog being given more meaning than he was in himself, what can be referred to as an 'over-determination of meaning'—the dog stood for other things.

Giving meaning to our world is how we live as humans. Humans create symbolic systems we call culture that help direct our lives, telling us what is right or wrong, how we approach nature, and our role in the world as guardians, managers or

masters. An anthropologist's job is to study these cultural systems and their symbolic objects, which are made up of meanings given to them by humans. We can very well question whether the same process of attributing meaning to an object or living being, as with the dog, happens in the conservation world with 1080 poison. Although conservationists appear to be just doing their duty when they use 1080 as a pesticide, I would question this understanding and maintain something else is also going on. Other concerns are influencing them—the 'overdetermination of meaning' placed on 1080 and the animals labelled as 'pests'.

One of the first clues that an increase in meaning influences conservation is the labelling of the poisoning activity as a war. A second clue is the idea of 1080 as a tool or a weapon. One last clue is an overzealous desire to present facts to support the poisoning activity. This obsessional reference to facts makes one wonder if rhetoric is at play, used to quieten opposition, or even maybe an attempt at quietening doubts in 1080 adherents themselves.

To further show how language determines our behaviour, I will give two other examples of the power of words and labels. Then, I will move on to a detailed sociological study of the place of sparrows and pigeons, labelled as 'pests' in the United States and how this bears a resemblance to what is happening in New Zealand with the poisoning regime aimed at possums, rats and stoats.

Names and Labels

A gardener friend's visit is another example of something being socially constructed by language. When he looked at the garden, it shocked him to discover 'wild' red and orange flowers with large green leaves making their way across the lawn at the back of the property. He advised us to get rid of these plants as soon as possible with a 'highly effective' poison—Roundup—as he said they would take over our property and destroy our garden. He called them 'weeds'. After being called 'weeds', I no longer perceived the plant as attractive. Therefore, we could say that how I saw and felt about this plant was shaped by language and not by facts or the plant itself. Later, I discovered these plants are

nasturtiums that can be eaten. As a result, I let the plants grow and acquired a taste for them, preferring them to lettuces. These days, I perceive the flowers again as rather beautiful. So much, then, for these plants being weeds. Yet again, we see another example of ‘to give a dog a bad name’—here, a plant.

This gardening example shows how a person’s feelings and thoughts about a plant and how to treat it can be based on their categorisations or labels and not the object itself. Their attitude has arisen through social and cultural factors, not from facts discovered in the garden. The nasturtium example is analogous to the story of the child and his dog. Despite what appears to be a simple matter of rangers going about their duty, we can understand the situation as something else: a conflict between two groups of people. The dog, a Pit Bull, considered dangerous because of his breed, stood for the dangerousness of the area where he lived. The professional gardener perceived the plant as a weed according to his conception of a proper garden. In his view, the plant threatened the rest of the garden. Therefore, the plant needed to be killed with poison—a questionable poison at that.

Still another example, was a neighbour giving us advice about naming sheep. Such an act, she said, would prevent us from using them as food. So, having or not having a name would determine whether they lived or died. By being named, the sheep crossed the boundary between being an object of consumption and being taken into a human family as pets, where they should not be killed.

In the above examples, the ‘weeds’, the ‘dangerous’ dog and the unnamed sheep can all be understood as being outside of human culture and outside of how things should be, and so open to having negative values placed on them. They are what the anthropologist Mary Douglas calls ‘matter out of place’ (1970: 48), and, therefore, they can all be killed without needing to reflect on what one is doing. What one does is determined by the categories attached to them.

Constructing our world and determining its value is what we all do, to some extent, ordinary people and also the cultural administrators (the claim-makers) such as politicians, teachers and scientists. The point is not so much that we speak discourses

about the world we have created as that these discourses speak us, determining our values, thoughts, perceptions and actions. These discourses exist before we speak them.

Power of Words

Discourses, then, attached to objects help guide how we respond to things. This function is especially important in discourses given by the establishment (the claim-makers) about which claims should be taken at face value—what are called hegemonic discourses. The pro-1080 discourse can be considered hegemonic in the sense that it is presented as the correct one, with opposing views labelled as non-scientific and frequently ridiculed.

Hegemonic discourses help us understand what we perceive, such as gestalt pictures of objects that can be seen as either ducks or rabbits. We will probably perceive a rabbit if we are told the image is a rabbit. If we are told the image is a duck, we will likely perceive a duck. In a stronger sense, we might say that these hegemonic discourses make things the way they are, at least for humans. As a result, people are hesitant to challenge dominant discourses. Regarding the garden, the visitor had more experience than I did as a gardener and possessed a certificate to prove his knowledge of gardening. Therefore, his account of the plant seemed difficult to dispute. The family of the boy and his dog found it difficult to challenge the council's authority. As for those who suggested we not name our sheep, they had lived in the countryside for a longer time than us and had already assumed that sheep are food for humans. Fittingly, these three examples can inform our attitude towards 1080 poison.

Regarding 1080, the use of this poison is promoted as a scientific approach and the best tool we have. Those opposed to this poison are branded as 'science deniers', 'conspiracy theorists', 'paranoid' and 'anti-intellectual'.^{8 9} Consequently, people find difficulty rejecting institutional views regarding what to do with those labelled as 'predators', 'pests' and 'invasive species'. Nevertheless, discourses other than institutional ones exist regarding what should be done with non-human animals seen as out of place, as will be shown.

So, this is the predicament of humans. We live in a world partly created by language. Therefore, social scientists and philosophers are needed to help us understand discourses like the one on 1080, which appears to be a purely scientific discourse but, on closer inspection, reveals other discourses, meanings and agendas.

In light of our discussion, then—the power of language to construct the world—some philosophers and social scientists hold that we never see the world ‘as it is’ and that this ‘as it is’ does not exist. According to them, we always view the world through the lenses we wear or the discourses we are engaged in. For that reason, we can view the scientific method as a particular lens that is helpful in some situations but not in others. Therefore, scientists need, at times, to remove their lenses, clean them or get another pair. This book is particularly concerned with the lenses used to examine 1080 poison and the poisoned animals.

Totemism—I’m a Kiwi

As another example of the power of words, we can look at totemism and identity issues. Some cultures have totemic systems that stipulate specific behaviours, such as not eating the totem object or not marrying a member of the totem group. This topic has drawn anthropologists’ attention for a long time. They view totemism as a way of ordering society. Thus, in referring to a totem animal, one is talking about those who identify with that animal as well as those who do not.

Now, totemism is not how modern society is structured, or is it? Is there no similarity between how we order ourselves and how totemic societies order their societies? Can we not say that, at least in people’s minds, differences exist between people who own Labrador retrievers and those who own Pit Bulls, as we mentioned before? For instance, sometimes we are asked whether we are a ‘cat person’ or a ‘dog person’, and there are conversations I can instantly tune into if I am a ‘dog person’ talking to another ‘dog person’. The same happens with sports teams, many of which are named after animals or objects. Examples include the British and Irish Lions, the South African

Springboks, the Wellington Lions, the Black Fins, the Silver Ferns and the Kiwi Ferns. Often, these teams represent the country or a district, and when they win, they inspire considerable pride among the people who live in the area where the teams are from. In New Zealand, there is a similar identity-building process to totemism, where people are called Kiwis. This practice began after the First World War (Phillips, 2007). Many non-New Zealanders are surprised to discover that the term 'true Kiwi' refers to both people and birds. Despite having the same label, the New Zealander and the bird seem to have nothing in common except that both are associated with New Zealand. Thus, we can see similarities between modern societies and those traditional societies with a totemic classification system. Still, another example is the New Zealand All Blacks rugby team, which has used the silver fern representing nationality as its emblem since the 1880s. The captain, Richie McCaw, commented that he believed 'the silver fern represented what it means to be a Kiwi' (Trevett and Fisher, 2015). Outside of New Zealand, this statement would make little sense. Nevertheless, it demonstrates how a totemic discourse can be creative and say something complex about people in simple metaphorical terms.

Another example can be seen with James Russell, an ecologist who uses an identity discourse when he suggests killing predators is a national pastime (Owens, 2017). Likewise, Maggie Barrie (former minister for conservation) appears to have accepted this discourse, as evidenced by her statement, 'I love killing possums' (Northern Advocate, 2018). As seen by science reporter Brian Owens (2017), human-animal studies researchers Nicholas Holm (2015: 33) and Annie Potts (2009), the hatred of possums can be considered part of the national identity of a New Zealander. The title of Reihana Robinson's (2017) book echoes this imputed identity: *The Killing Nation: New Zealand's State-sponsored Addiction to Killing*. Additionally, Robinson's title suggests that this killing mentality may be part of a hegemonic discourse emanating from the state, or as in this case a state sponsored establishment.

But as well as this killing mentality being hegemonic, the question arises of whether this mentality shown in DoC's mass killing of animals is a pathology. We see that Robinson is of this

opinion. She calls it a state-sponsored addiction. Ed Boks (2019), former Executive Director of the NYC and Los Angeles Animal Care & Control Departments, agrees, as seen in his article, 'Traditional Conservation Science is a Pathological Disorder: Just Stop Killing Animals'. Furthermore, Deborah Bird Rose considers such mass killings a sado-dispassionate form of behaviour [or misbehaviour] (2008: 63). There is certainly a possibility, then, that this mass killing is a pathology caused partly by the projection of a destruction urge onto possums, rats and stoats and away from awareness of humans' destructiveness and aggression—what is called a displacement in psychoanalytical terminology. This idea becomes even more probable when we look at the history of the enslavement, exploitation and cruelty of humans towards animals over the centuries (Phelps, 2007).

Considering what we have said about totemic systems, identity and the symbolic nature of language, we can conclude that discourses about non-native and native species can also be about more than purely environmental issues. Concerns such as nationalism, colonialism, immigration and human relationships with nature may be present.

A Rat with Wings

Besides the use of totemism to construct the world, as seen above, there are other identity discourses, based on taboos, such as those applying to the food we eat. These taboos, often put in terms of 'clean' and 'unclean', dictate what we can and cannot eat. The Israelites, for example, did not have a totemic system but had a dualism of clean and unclean with which to label various animals. These attributions dictated what could be eaten. Anthropologists view this classification of clean and unclean as having more to do with the ordering of the world than issues of hygiene.

Initially, anthropologists viewed food taboos as part of a primitive religious system that had not yet attained the status of being a 'true' religion free of all primitive rituals and taboos, a view influenced by Protestant modernist ideology. With modern health developments, taboos surrounding the classification of food as 'clean' and 'unclean', became understood as ways to deal

with unsafe and potentially unsanitary foods. For example, eating uncooked pork in tropical countries could harm one's health. However, Mary Douglas sees this explanation as an example of 'medical materialism', a reductionist theory that focuses only on the physical aspects of the practice, ignoring other more relevant factors (1970: 42-44). She sees such taboos as part of a complex symbolic system about 'matter out of place' as defined by the categories 'clean' and 'unclean' (1970: 47- 48).

Even though we observe this attribution of categories such as clean or unclean to food or animals in 'traditional' societies, it also occurs in 'modern' societies. So, in the title of a paper by sociologist Colin Jerolmack (2008), 'How Pigeons became Rats—The Spatial Logic of Problem Animals', the pigeon in the United States is presented as unclean and out-of-place by association with rats. For the author, this pollution belief is based on a metaphor of health taken from modern scientific discourse about rats, which disguises other political and social factors underlying the belief. In his paper, Jerolmack outlines the history of the pigeon and how it displaced the sparrow as 'public enemy No. 1' from the 1940s onward (2008: 72). Based on Fine and Christoforides' (1991) study of the 'Great English Sparrow War' in the United States, 'Dirty Birds, Filthy Immigrants, and the English Sparrow: Metaphorical Links in Constructing Social Problems', Jerolmack identifies the fear of immigration and job loss as the source of the hatred towards the sparrow in the late 1800s (Jerolmack, 2008: 74). It was as if the anti-invasive species members of the establishment who helped frame the sparrow as a pest, were unknown to themselves working for the anti-immigration politicians. These members of the scientific establishment, though, presumed they were simply doing science.

The sparrow was one of the first species to be labelled 'invasive' in the United States (Conservation: Sense and Nonsense, 2012). Wildlife biologist Peter Coates (2006), in his book *American Perceptions of Immigrants and Invasive Species*, examines the relationship between attitudes towards immigration and diversity among people and attitudes towards 'invasive species' in ecology. People debated the question of the sparrows' presence acerbically, with much name-calling. Similarly, in New Zealand,

debates over rats, possums and stoats involve much name-calling. As more immigrants went to America, the conversation about the sparrow as an invader faded (Jerolmack, 2008:75).¹⁰

From the 1930s onward, however, the pigeon also became the object of a similar discourse as the sparrow. So, once pets, messengers in wartime and food, pigeons became ‘pests’ needing to be eliminated. They became despised animals who were shot, gassed, electrocuted, poisoned, trapped and fed contraceptives, all as a way of trying to get them into their proper place. In this situation, humans determined their place, not nature (Jerolmack, 2008: 72). Jerolmack believes that the problem of pigeons arose from institutional ‘claim-makers’ and their boundary work—deciding who is in and who is out of a particular society. Anxiety over order and disorder led to the pigeon being considered ‘matter out of place’ (2008: 73-74). As the pigeon discourse developed, the conversation about politics and society became disguised under the banner of scientific discourse on the health and hygiene of the pigeon.

Like the pigeon discourse in the United States, we have a discourse about possums, rats and stoats in New Zealand. We consider them problems, label them as ‘pests’ and ‘predators’ and speak of them as enemies of our paradise-like country (once in a more religious culture referred to as ‘God’s own country’). In contrast, we regard the nonhuman kiwi as a peaceful and gentle bird that does not bother anyone as it goes about its business. The ‘kiwi’ label, referring to the bird and people, has taken on a life of its own, making anything in opposition an object of warfare. How dare they? We can regard these oppositional animals as ‘predators’ who are out to destroy kiwis, thus becoming the enemy of ‘true Kiwis’.

In demonising rats, possums and stoats, DoC and some conservationists become the institutional claim-makers who carve out the boundaries that separate the good from the bad animals. Also, they define the type of environment we should value, and they have the power to label what is natural and what is not. Their work is conducted in terms of the authoritative language of science. Nevertheless, like Mary Douglas writing about food taboos, we might agree that there is more going on than appears

at first glance in our poisoning of predators and that these animals considered pests can be considered 'matter out of place'.

Given the strong feelings regarding rats, possums and other pests in New Zealand, we could argue that our reactions to these animals are primarily determined by the categories we place on them and by cultural discourses rather than by what these animals are in themselves. The categories of 'pest', 'invasive species' and 'predator' are not scientific terms but are often presented as such. Typically, the term 'predator' refers to a wild animal that hunts or preys on other living creatures.¹¹ Some predators are carnivores, while others are omnivores. As omnivores, Kiwi birds eat insects and plants but are not considered predators. There is also the implied meaning that predators are frightening, unclean and scary.

In Jerolmack's analysis of pigeon articles in newspapers over fifty years, we notice how changes occurred in pigeon rhetoric. He shows that pigeon-related articles over this period are often rich in rhetoric and reveal how a particular era makes certain species into problems (2008: 76). One example can be found in the New York Times of 1966, which requested that a local park be restored from 'litterers', 'vandals', 'homosexuals', 'winos' and the greatest vandal of them all, pigeons. The park commissioner called the pigeon 'a rat with wings'. Consequently, this label remained with the pigeons, leading to their becoming a symbol or scapegoat for many of society's problems (2008: 80-81). So, talking about rats and pigeons as pests became a coded way of referring to these other problems, as shown earlier with the dog taken from the boy. And, also, labelling pigeons as pests helped build up a lucrative pest-control industry (2008: 83), as did labelling animals as pests in New Zealand (Benfield, 2011: 41-43).

With the sparrow and pigeon example, one can see how we can make metaphorical connections tied up with identity issues that appear to refer to one thing (aspects of nature—sparrows and pigeons) but relate to another thing (here human society). For example, the word 'rat' in New Zealand invokes what we consider bad and repulsive, so we use the term 'dirty rat' to refer to someone who has tricked us. As a result, these animals carry and represent the meanings humans assign to them in their names. Thus, they become a component of the human communication

system rather than what they are in and of themselves. So, rats, stoats and possums become the scapegoats for all the wrongs in the physical environment in New Zealand. Humans pillaging and devastation are thus covered over and forgotten.

Rats, Possums and Stoats

Our categorisation of animals allows some to be honorary members of our society. Pets or companion animals are welcome if they adhere to our rules and stay under our control.¹² We have seen how the authorities tried to control the boy and his dog. Because the dog was a Pit Bull, this was made easier because he already had the label of being aggressive. New Zealanders consider cats and dogs as their pets, although there is debate regarding a cat's status. Other non-human animals, such as sheep and cows, are also considered part of our culture as they provide us with food. For cows, one concern is whether these animals have bovine tuberculosis (TB). However, the concern is not TB's impact on cows but how it affects the economy. The only issue with possums having TB is whether they can pass it on to cows.¹³ Then, there are the 'true' wild animals and birds. Here, native animals have a special place. But rats, stoats and possums have no place in the system, not even as wild animals, because they do not fit our notions of what wild animals should be like. They are 'predators', 'pests', and 'vermin' that should be trapped, stomped on, run over or poisoned.

As with sheep, humans brought possums to New Zealand to be fur suppliers. Stoats were brought in to control rabbits, but possums and stoats took on a life of their own outside of human control. The war on rabbits has lasted so long that the use of hunting, poisoning, trapping and viruses to control them no longer makes headlines, despite the use of a new virus strain: rabbit haemorrhagic virus disease (RHDV1 K5).

The same thinking that disregards animals' subjectivity applies to rats, stoats and possums. The writing about these beings is also more concerned with conservation issues than what they are in themselves. They have become enemy combatants in a long-drawn-out battle to exterminate them. Their lives are not considered as Jakob von Uexküll, Deborah Bird Rose, Gosia Bryja, Marc Bekoff and psychologist/philosopher Vinciane

Despret consider the subjects of their essays, that is, as beings with their own subjectivity but as objects determined by their labels.¹⁴ As Douglas might say, the writings on pests are examples of ‘reductive materialism’. We can call it environmental materialism or environmental mechanism, in which beings are only considered objects of instrumental value in terms of their value to the environment.

Despite this demonisation of rats, recent animal studies have shown that rats are social creatures. They can show empathy for other rats, coming to their rescue in troublesome situations (Underwood, 2015). Mirror experiments to determine whether animals are aware of themselves have also shown that rats have some awareness of themselves (Crystal & Foot, 2007). Jaak Panksepp, a neuroscientist and neurobiologist, has found that rats have greater cognitive abilities than previously believed (Keim, 2015).¹⁵ Plus, more recently, it has been shown that rats enjoy playing hide and seek with experimenters (Underwood, 2019). It would be nice to think that the experimenters engaged in such behaviour because of the mutual enjoyment involved, and perhaps that is the case. But, in these experiments, the rats (not the experimenters) had monitoring devices attached to their brains. I believe they were killed after the fun and games. See ‘The study that made rats jump for joy and then killed them’ (Webb et al., 2020). As well as sounding pathological, the experimenters can be considered unethical. They seem to have left their ethics and compassion at the laboratory’s door. However, their work does contribute to the growing body of knowledge that questions the anthropocentric stance often held by animal experimenters, conservationists and farmers, which has been a fundamental part of our culture for centuries.

In New Zealand, possums have become public enemy number one (Potts, 2009: 4). They are demonised and targeted for extinction. Potts refers to a saying in New Zealand regarding possums: ‘The only good possum is a dead possum’ (2009: 1). Some encourage drivers to drive over them when they meet them on the road (McCrow-Young et al., 2015: 29).

In an analogous manner to the work on rats and pigeons, social media scholars McCrow-Young et al. (2015) and Holm

(2015) examine the over-determination of meaning placed on possums—the extreme hatred, murderous impulses and the extermination discourse. They mention how social media helps frame the discourse on possums, using war metaphors like the war on terror or the Gulf War, inspiring hatred, disrespect and maltreatment (McCrow-Young, Linné and Potts, 2015: 33-34). I am not sure, though, whether the war on pests will have the same disastrous outcome as the 20-year war in Afghanistan—it is possible. Often, the media will provide cold, hard ‘facts’ about the number of possums killed and the effectiveness of the technology used, but individual poisoned animals get little attention (McCrow-Young et al., 2015: 37, 38, 44). These communication methods frame the animal as deserving of what he or she receives. They do not allow for empathy or compassion (2015: 29). Rather, the focus is on controlling and dominating the predator. Patriotism is sometimes invoked, such as during a war. As with the rat, anyone voicing a different view is considered unpatriotic. In contrast, we frequently see native birds in the news, often with people fawning over a single sick or recently released bird, sometimes a kiwi given a name. But we do not see the sufferings of a possum presented or the naming of the animal, only the number killed.

In discussing the category of ‘predator,’ we find McCrow et al. (2015), Nicholas Holm (2015) and Jamie Steer (2015a) referring to hidden discourses of nationalism, xenophobia and colonialism tied up with these discourses on ‘predators’.¹⁶ Holm describes colonial guilt and a [secular] redemption story enacted in these discourses. As part of the redemption process, sacrifice is used to assuage this guilt. The sacrificial victim (the possum) enables the land to be restored to its original state, at least in fantasy (Holm, 2015: 46-47). We are promised that ridding the country of these invaders will bring the environment back to its former state of paradise, as it once was before Europeans came to New Zealand. This return to paradise theme is an example of the existence of metaphor and a parallel language where, when we discuss kiwis, stouts and rats, we are also discussing people, nationalism and colonialism. We see a nationalist discourse embodied in the following quotation, where it seems we are

humorously discussing non-New Zealand Australians. So, in the example, a discussion is going on about a possum killing a tree by overeating it, and one person is saying, 'You'd think possums would have more sense. ... But then possums have really small brains. And they're Australian, aren't they?' (Potts, 2009: 5).

While the possum gets much of the blame for destroying New Zealand's pristine environment, the white colonialists get off the hook. Nevertheless, white colonialism and humans generally have been the most significant predators on the New Zealand landscape and have had a major impact on the environment (Holm, 2015: 47).

To summarize, the discourse of possum hatred is 'entangled with postcolonial anxieties about the natural world' and colonialists' role in destroying it; colonialists having brought in the possum in the first place (Holm, 2015: 33-35, 45-48). The same can be said of other predators. The war against predators, though, loses its overt political reference as it becomes a scientific discourse, but this reference remains in the unconscious and can be seen as contributing to the killing frenzy of conservation.

Along with a link to nationalism, anthropologist Anna Tsing (1995) and environmental philosopher Mark Sagoff (1999) have argued for a connection between concern for invasive species and xenophobia. Landscape architects Gröning and Wolschke-Bulmahn (2010) have also argued for a link between this concern and fascist ideology. According to science reporters Mathew Phelan (2018) and Joel Achenbach (2019), the number of people and organisations linking environmental concerns with fascist ideology has increased with the rise of the far-right. Despite ecologist David Simberloff's denial of a connection between invasion biology and fascism, he concedes that in Nazi Germany, there was a connection between the Nazis' thoughts about invasive plants and their thinking about Jewish people (2003: 182). Additionally, Tom Regan believes that killing animals for the sake of other animals is an example of environmental fascism (1983: 262) (see Ch. 5, note 9, p. 157) for more on the connection of environmentalism with fascism).

Another point about those who label an animal a 'pest' and use poison against the animal is that their behaviour and

underlying mentality are like those at the forefront of the 17th century scientific revolution. At that time, animals were regarded as machines with no feelings and as existing for the sake of humans. With its disregard for consciousness and mind, Skinner's behaviourism helped return the public's understanding of what an animal is in the 20th century to the mechanist view of Descartes and others of the 17th century (Rollin, 2007). Kiwis and other native birds are exempt from this mechanistic framing, perhaps because of their labelling as 'true kiwis' and their role as totem animals. While many people believe science works objectively to help us decide which animals should be killed and which should live, the next chapter will demonstrate how science is not always objective and free of cultural and social influences.

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Science, Facts, Objective Knowledge and Empiricism

Epistemology without contact with science becomes an empty scheme. Science without epistemology is—insofar as it is thinkable at all—primitive and muddled.
Albert Einstein

Scientific activity comprises the construction and sustenance of fictional accounts which are sometimes transformed into stabilized objects.
Bruno Latour & Steve Woolgar (1986: 235)

We do know for a fact now that the high profile that some theories enjoy over others is not unrelated to the persuasive and rhetorical skills employed by groups of scientists, to the publicity techniques and media they control or have access to, and other such transmission mechanisms which are necessary to propagate a point of view. ... Scientific research is heavily dependent on funding by government, by foundations and by private industrial corporations and the like.
Stanley Jeyaraja Tambiah: (1990: 142-143)

The vivisector ... not only calls his method scientific: he contends that there are no other scientific methods. When you express your natural loathing for his cruelty and your natural contempt for his stupidity, he imagines that you are attacking science.
George Bernard Shaw (1909)

Because scientists, like everyone, are guided by their values and worldview (and even more so by those of their funders and employers) they tend to focus on questions that do not challenge their own underlying beliefs. As a result, the small subset of the truth that they tell us is conditioned by a kind of ecological xenophobia—the idea that, in our wild places (though not our farms and towns) natives are good and exotics are, by definition, bad.
Steer and Taylor (2016)

In Philosophy 101, we spent half of the year analysing the question ‘Are snakes present in Bulawayo’ and what it would

mean to say that they were present. Analysing this question was an introduction to epistemology (the theory of knowledge) and the philosophy of science. Although I did not learn whether there were snakes in Bulawayo, I learned about knowledge and facts and how they are validated. The insights gained from pondering such questions will inform our discussion of 1080.

Many pro-1080 adherents refer to truth, facts, science and objectivity in the ongoing debate on the use of the poison in New Zealand. However, they say little about what these terms mean. It also seems that 1080 advocates assume they possess a monopoly on facts, which they would like to convey to anti-1080 adherents. By their constant recitation of facts, they think those opposed to 1080 will finally turn from their perverse views and accept that this poison is the right way to deal with ‘predators’.

Even though arguments for 1080 in the secondary literature are derived from the primary literature, the secondary literature is more insistent on using the poison in conservation. So, for example, in the long-term (4-year) study by Van Vianen et al., ‘The effects of single aerial 1080 possum-control operations on common forest birds in the South Island, New Zealand’, a primary source, the article concludes that ‘for some common forest birds, there were some apparent conservation benefits and no apparent conservation drawbacks’ (2018: 176). Here, the findings are not dogmatic but suggestive, as if in keeping with the understanding in philosophy that inductive reasoning (derived from empirical observation) can never give absolute knowledge. In contrast, we observe in an article by biology lecturer Alison Campbell on 1080, a secondary source, a more definite argument for 1080 and the truth of the facts involved, even though she relies on primary sources (2018). To support the use of 1080, she presents ‘facts’ from other reports and describes views that disagree with hers as based on ‘untruths’. The author also labels those who oppose 1080 as science deniers and conspiracy theorists.

In another article supporting 1080, scientist Andrea Byrom agrees that more than ‘evidence-based thinking’ is involved in the debate on 1080 (2018). Despite this acknowledgement, she then asserts that pro-1080 advocates have reason and logic on their side because if people had reason and logic, they would not be

against the poison. However, what we can observe here is an instance of tautology. The statement is true, but only because of the way Byrom defines having reason and logic, as agreeing with 1080 use. To her, the reason for holding an anti-1080 view is that decisions are made based on personal values, belief systems and world views as if these do not influence scientists and other pro-1080 advocates.

Contrary to the last two scientists mentioned, Wayne Linklater (2018), formerly an associate professor of ecology, criticises Byron's position and other ecologists for their misguided understanding, when discussing 1080 of what facts and truth are and their place in scientific discourse. As Steer and Taylor said in the quotation at the beginning of the chapter, scientists also are guided by their values and worldviews and can be conditioned by 'ecological xenophobia'.

We can find examples on pro-1080 online sites demonstrating a lack of understanding of what science is by people arguing for 1080 use. For instance, DoC's website has a page titled 'Science supports using 1080' that lists other sites and people who support the cause. The page list includes the Parliamentary Commissioner for the Environment's 2011 report on 1080, the 1080 Facts website and science journalist Dave Hansford's book *Protecting Paradise*.

Hardly any of the above sites or people explain the nature of science, what a fact is or how facts contribute to our knowledge. They simply comment, 'science shows us...', this is what science proves' and 'these are the facts'. Thus, without a more detailed explanation, we can very well consider their repeated appeals to facts as dogmatic mantra-like statements used rhetorically to support their pro-1080 position. In the words of philosopher/historian of science John Schuster, these repeated claims to truth, accompanied by facts, can be called their 'posturing' and attempts at 'persuasion' rather than valid arguments (1995a:166, 262). For example, we can see this posturing in Hansford's work, in his persistent name-calling (ad hominem attacks) on those opposing 1080. He describes them as science deniers, creationists, anti-vaxxers, anti-fluoridation and anti-intellectual (2016: 109). Nevertheless, Schuster says not just

of ordinary people supporting a cause but also of scientists: ‘Their facts are slippery, conditional, constructed, historically variable, and the product of their theories and viewpoints’ (1995a: 4). Can we not say the same about Hansford’s and other 1080 supporters’ lists of facts?

Anyway, as far as I know, ecological and conservation scientists like Marc Bekoff, Chris Thomas, Gosia Bryja, Arian Wallach, Wayne Linklater, and Jamie Steer, as well as scientist Michael Morris and social scientists Eileen Crist, Mary Bird Rose and Lynley Tulloch are not science deniers. They have all written against the use of 1080 or on a related subject. Jamie Steer, for instance, does not support a blanket attack on ‘invasive species’, and he advocates we should learn to live with all animals in our environment (MacDonald, 2018). This is the opinion of a scientist with a PhD in ecology. Another example is Mark Bekoff, who strongly opposes the use of 1080. He is an internationally renowned scientist and the author of numerous books and articles. Yet, these scientists get hardly any mention by advocates for 1080 when arguing for using the poison.

Admittedly, Hansford is one of the few pro-1080 advocates who mentions philosophical and ethical issues but only briefly. He says he does not consider all opposition to 1080 to be based on science denial, conspiracy theories, etc. And he points to those who genuinely hold philosophical and ethical views that lead them to be opposed to 1080 (2016: 7). But just before this statement, he mentions the subjectivity of philosophy, which, in his opinion, allows all views to be understood as valid (2016: 6). Later, he says, ‘In ethics, you’re entitled to any position you damn well please’ (2016: 109). Try saying that to a friend of mine who failed his ethics examination. Hansford’s statement is unfortunate for his position, as his argument, unknown to him, is primarily ethical, disguised by his posturing behind a barrage of facts and assertions that his views are scientific. So, if he is right that moral beliefs are neither right nor wrong, then his view of 1080 is itself neither right nor wrong but just an expression of his preference.

The posturing observed in Hansford’s work is often less evident in scientists’ writing, yet it is still present. We notice it in Alison Campbell’s article mentioned above. But we also see it in

the primary literature, in the writing on the use of aerial 1080 by Van Vianen et al. (2018). Their posturing does not display deliberate, conscious or arrogant intent. Nevertheless, Schuster claims that this posturing is inherent to the scientific endeavour. So, we perceive in the article by Van Vianen et al. such taken-for-granted assumptions as anthropocentrism, a mechanistic mentality—poison as merely a helpful tool—and collectivism—a species or ecosystem has more value than an individual. These views are behind the posturing leading to the views taken. They are taken for granted rather than stated and justified. However, we would never consider using such a poison without these postulates. Sadly, people are easily swayed by the assurance associated with the authoritative way a proposition is presented. Being aware of the assumptions that underlie these propositions would weaken their acceptability.

As with facts, so with the notion of science. Pro-1080 adherents rarely elaborate on the idea of science they are using in their advocacy. Instead, it is assumed. Again, we can note an exception in Hansford. Still, he limits his explanation of how he understands the scientific process to only a few lines, like his discussion of philosophy and ethics. But understanding the issues with 1080 requires more than this. The importance of understanding the idea of science used in debates on the use of poison is like the importance of understanding the ethical and value foundations of one's opinion. Both discussions are missing among pro-1080 advocates. In Hansford's work, we first notice that he opposes scientific knowledge to belief, unaware that some have defined knowledge as 'justified true belief' (2016: 10-11). Second, in the chapter, 'The Truth is out There,' and in the next chapter, he suggests science is about objective evidence that can be verified by experiments (2016: 106, 111, 136). As we shall see, such an idea represents a narrow view of science. Truth and facts are not just out there, as he insinuates. They do not grow on trees, waiting to be picked by empirical scientists.

It is the case that many pro-1080 advocates and some scientists who have written about 1080 adhere to an empirical understanding of facts and science. However, this position is questionable. We could say that those who hold the empirical

view of science belong, in the words of the historian of science John Schuster, to a 'cult of facts' (1995a: 3); see also *The Politics and Rhetoric of Scientific Method*, 1986. We can also describe this cult of facts as a religion of 'scientism'.¹⁷ For instance, Hansford contrasts his 'scientific' view with the view of those opposed to 1080, suggesting they do not have a 'scientific outlook' on the matter. He calls them science deniers (Hansford, 2016: 7-8, 10-12). However, we can quickly turn the tables on his view and consider it more of a cult with the pretension of being science. In the 1080 debate, Hansford positions himself as one of the 'good guys', guided by science, logic, insight and sanity as opposed to the anti-1080 brigade, the 'bad guys', (terms used by Schuster 1995a: 4, 14-15, 17) driven by prejudice, propaganda, ignorance, belief and insanity (Hansford, 2016: 11-12, 109, 157, 166-167). Another view of what is happening could be that in the debate, we notice people who, as Schuster describes scientists, struggle to construct, make and sell certain facts, as opposed to others who also struggle to construct and sell other facts (Schuster, 1995a: 4).

The Social Construction of Science

From the quotations at the start of the chapter, we discern that science is presented as something created by humans in particular communities rather than as an objective method used to acquire unquestionable knowledge of the world. We can acknowledge such recognition in an article by Cate Macinnis-Ng, a scientist who once served as the New Zealand Ecological Society's president. In this article, she writes of facts occurring in specific communities and societies where values are at stake (2019). But despite her recognition of social and cultural factors at play in science, she does not follow them up. Instead, she reverts to the usual argument for 1080, citing facts as if they dictate that conservationists should use 1080.

For an example of how scientific knowledge is constructed within a particular society, we can turn to Darwin's theory of evolution. Perhaps if Darwin had not lived in an era characterised by capitalism with its underlying theme of competition and if he had not read Malthus' essay on population growth, he would not have produced the theory of evolution with its 'survival of the

fittest' principle (Coase, 1985: 73, Florek, 2014). Likewise, using 1080 to eliminate all unwanted animals would not be considered in a society that did not promote a technomanagerialist approach to problem-solving, did not adopt a mechanistic concept of reality and did not emphasise human superiority. Without these assumptions, we would not adopt a view pointing to widespread animal poisoning as the correct approach to protecting the environment.

Consequently, assessing knowledge claims is much more complicated than the empirical approach suggests and is not just the province of scientists. Besides scientific work, evaluating knowledge claims involves logic and social factors that contributed to the creation or perception of the problem in the first place. Given these reasons, Jerolmack, a sociologist, considers it wrong to leave the study of animals and nature to natural scientists (2008: 90).

In the theory of the social construction of knowledge found in sociology and philosophy of science, scientific discoveries are made or produced by humans rather than simply discovered. Interestingly, we can observe a constructivist approach to science in the titles of the following works: *Inventing Temperature: Measurement and Scientific Progress* by Hasok Chang (2004), PhD, professor of history and philosophy of science at Cambridge University; *Laboratory Life, The Construction of Scientific Facts* by sociologist Latour and Woolgar (1979)¹⁸ and *The Invention of Nature: The Adventures of Alexander von Humboldt: The lost hero of Science*, by Andrea Wolf (2015). Also, when we look at the book *Contemporary Debates in Philosophy of Science* (Hitchcock, 2004), we observe various articles that show areas of science with different opinions. For example, 'Why thought experiments transcend empiricism' and 'Why thought experiments do not transcend empiricism'; 'Probability captures the logic of scientific confirmation' and 'Why probability does not capture the logic of scientific justification'; 'A theory's predictive success can warrant belief in the unobservable entities it postulates' and 'A theory's predictive success does not warrant belief in the unobservable entities it postulates'; 'Causes are physically connected to their effects' and 'Causes need not be physically connected to their

effects'. Besides the above list, we can add what Hansford points out as a significant dichotomy and inconsistency: 'the public are being asked ... to support the use of 1080. If they don't, they've been warned, our native biodiversity will go down the gurgler. At the same time, 1080 opponents implore the same public to renounce it. If they don't, they've been warned, our native biodiversity will go down the gurgler' (2016: 11). The author holds that one of these positions must be true, and the other false. Unlike those academics mentioned above, Hansford holds that those who take an opposite view to him regarding 1080 are unscientific in their approach.

The Scientific Discourse

We have argued that the approach to 1080 taken by advocates, including scientists, belies what science is about. Arguments by these advocates are often aimed at wooing people to the pro-1080 viewpoint by portraying proponents as 'true believers' on the side of science and those who oppose 1080 as 'unbelievers' opposed to science. Schuster might call these people the 'good guys' and the 'bad guys,' those who fought for what later turned out to be scientific truth and those who opposed it—what he calls a 'Whig view of science' (1995b: 33). He also points out that establishment figures wrote this 'Whig' history of science after research findings had already been accepted as true and not before when scientists from different viewpoints worked together on their different projects. Such a retrospective division of good and bad science is regarded by Schuster as a false dichotomy by Schuster and a naive view of science (1995b: 33-34, 38-43).

Schuster identifies four myths underlying the above naive view of science (1995b: 12, 25):

- 1) Science discovers the truth about nature.
- 2) Technology applies scientific knowledge to practical ends.
- 3) Society adjusts to technological innovations—people should not interfere with scientific concerns but accept its findings and associative technology (1995b: 14-15).
- 4) Humanity (happily) benefits and social progress results.

Schuster argues that the four propositions listed above have served as the basis of Western society since the rise of modern

science in the 17th century. For him, the four propositions offer a ‘nice story’ about science but also serve as barriers, protecting it from criticism rather than revealing its essence (Schuster, 1995b; 33-36). Science for Schuster is messier and more complex, involving cultural, political, economic, ideological and other factors (1995b: 37, 45, 48, 54). Therefore, we notice in the essay by Van Vianen et al. such implicit assumptions as anthropocentrism, a mechanistic mentality—poison as merely a useful tool—and collectivism—a species or ecosystem is more valuable than an individual. These are the opinions that lie behind the posturing that led to the ideas held. Instead of being expressed and justified, they are assumed. Without these postulates, we would never consider employing such a toxin. Sadly, individuals are susceptible to persuasion when a suggestion is delivered with confidence and authority. The legitimacy of these claims would be diminished if the underlying assumptions were revealed. Behind the posturing that led to the ideas held are these opinions. Instead of being expressed and justified, they are regarded as given. For example, Schuster claims that Galileo did not prove the Copernican theory that the earth orbits the sun. Instead, he persuaded others to believe his theory (1995a: 146). So, for Schuster, there is no untouched inner realm in which science works separated from the values, ethos, politics and financial issues of the outside world. There is no inner sanctuary where scientists work. In the social constructivist view, all these factors (values, ethos, politics) are present in scientific endeavours.

Consequently, Schuster judges professor of history of science Steven Shapin’s view that the 17th century scientist Robert Boyle was the originator of the empirical, experimental method (in which theoretical matters of fact were produced in a factory-like manner and subsequently passed on through the trust relationships of other scientists in the Royal Society) as wrong (1995a: 259-260). He says of Shapin’s statement, ‘Boyle arguably entered more matters of fact in the register of the seventeenth-century English experimental community than any other individual’, that it is the silliest thing Shapin has said (1995a: 261). Schuster argues Shapin has missed the ‘posturing’ in Boyle’s

work, the negotiations, the persuasive tactics and the underlying principles that formed Boyle's work, all of which scientists involve themselves in when negotiating their careers (1995a: 261). Finally, Schuster describes Shapin's notion of facts as the 'postage stamp and album model,' which ignores the rhetorical aspects of Boyle's presentation and the theoretical orientation that allowed the discovery of facts (1995a: 261). In other words, facts are theory laden. One will not find facts without holding a theory about them and the world in general, even if these are assumptions rather than conscious reflections. According to Schuster, Boyle pretended not to be a member of any natural philosophical sect nor to follow a specific theory and said he depended on facts to support his beliefs. Nevertheless, Schuster says that was just his posturing in the natural philosophical contest of the time (1995a: 262). To him, it was Boyle's framing rhetoric. He concludes, 'Yet, poor old Shapin has swallowed Boyle's positional rhetoric hook, line and sinker, mistaking it for the guts of some de novo form of efficacious scientific practice with a vast and portentous destiny' (1995a: 262).

Can we not say something similar about believers in 1080 predator control and their grandiose illusion that they will rid New Zealand of predators by 2050? Do not they also exhibit this posturing and possess theoretical orientations that shape their reasoning? For we see no pro-1080 writers or sites on 1080 referring to their conclusions as belonging to a particular ecological sect (a theoretical point of view). Rarely do we get a person writing in an article, 'I come from the viewpoint of invasion biology; therefore, I do not include introduced species as part of biodiversity' or 'I hold to the restoration view that we should restore environments to how they were before Europeans came. Therefore, I present a mechanistic way of getting rid of these animals'. Worse still, adherents identify themselves as having an 'efficacious practice', the use of 1080, which to them has 'a vast and portentous destiny'—to save the environment from the ravages of evil rats, possums and stoats.

We note that Schuster's four points or myths that apply to traditional views of science can also apply to the pro-1080 camp. First, an idea exists that scientists believe native bird life in New

Zealand is disappearing due to ‘predation’. 1080 adherents present this as a fact. Second, instrumental reasoning shows that using 1080 is the best way to overcome the problem. This statement is also considered factual. Third, people should simply shut up about the issue and leave it to scientists. And finally, using poison will benefit the people of New Zealand and be the right thing for the birds. As Schuster might say, the argument for 1080 is a ‘nice story’, but certainly not for the animals poisoned. However, as nice as it may be, the story can be taken to be simplistic and naive.

We can discern in Steer’s (2015b) paper, ‘Scientific research on introduced wildlife in New Zealand: For whom and at what cost?’ a deconstruction of the ‘nice story’. In the article, he stresses the importance of recognising the limitations of science, the biases and assumptions connected to it and understanding that science is not uninfluenced by social factors (2015b: 87, 94). Biases can arise from investigations focused on the negative features of introduced species without similar research on their positive attributes, concentrating on issues benefiting humans rather than advancing science (2015: 88), and valuing groups over individuals, thus allowing individual animals to be sacrificed for the group. Steer cites funding issues, relationships between institutions, the inability to criticise and scientific work used for advocacy as all being able to influence objectivity (2015: 94-95). He gives the example of some staff in a conservation department being hunters and one staff member going out hunting with members of a local acclimatisation society (2015: 94). Such people are hardly going to be advocating for a no-kill policy. Moreover, Steer draws attention to scientists at one time being more concerned with exterminating introduced species than studying whether they caused the problems attributed to them (2015b: 89). He gives examples of the negativity placed on magpies, deer and mallard ducks. For instance, deer were wrongly blamed for soil erosion in mountain areas. However, rainfall was later found to be the primary cause of the erosion (2015b: 90). King’s (1985) statement on stoats is noted—that they should not be denounced

for the bird losses up to that time since they did not have contact with many of the lost birds (2015b: 93). Steer also refers to a study showing no change in species composition in conifer/broadleaf forests inhabited by possums for 14-25 years (2015b: 93). In conclusion, one could decide from reading the article that questioning conservation might be a good idea.

Various positions on the nature of science

Since Francis Bacon (1561-1626), concepts like perception, induction, causality and prediction have played an increasingly significant role in science. The logical positivists of the 1930s took these ideas to extremes. So, philosopher Martin Hollis calls logical positivism ‘the ferocious version of empiricism’ (2002: 42). Given the massive killing agenda of conservation in New Zealand and the insistence that the use of 1080 is a scientific approach, one could very well ask whether this agenda is also a ferocious version of empiricism.

Central to the logical positivists’ agenda was philosopher A. J. Ayer’s postulate that for a statement to be meaningful, it must be empirically verifiable (1936: 48). Ironically, Ayer considered this statement to be true even though the statement itself is not empirically verifiable. His central thesis is therefore false. As a result, we can conclude that true statements are not based solely on empirical verification. Consequently, the ideas of science held by those such as Hansford, who describes himself as an empiricist can be considered inconclusive. They might be wrong. These ideas are often found in writings on 1080. The empiricist version is only one view of science, and it is a naive one at that.

Another philosopher, Karl Popper, developed an alternative explanation of the scientific method based on the concept of falsification. He disagreed with the empirical process of observation and experimentation leading to the establishment of facts—the verification principle (Hollis, 2002: 71-73). For Popper, one should start with knowledge or theory, not just observations. After that, we seek regularity in our observations. However, Popper held that knowledge was not gained by gathering facts that supported a position—verification—but by searching for evidence that might refute a statement. Popper

called the principle at work in seeking knowledge the principle of falsifiability (Popper, 1976: 38). That might be the type of science those who oppose 1080 employ.

A third very influential theorist of how science works is the philosopher of science, Thomas Kuhn. He gave great importance to the role of paradigms. His ideas can help us understand the importance of examining the social and cultural context in which ideas on 1080 are formulated. Central to Kuhn's views on science was that science is not so much about gathering facts that give us objective truth about the world but about paradigms or leading ideas that guide the work of scientists (Kuhn, 1962).¹⁹ These paradigms include assumptions and practices that are often unquestioned and not mentioned. Based on these paradigms, we postulate facts and solutions to scientific problems. Eventually, however, problems (anomalies) will arise within the paradigm that cannot be fixed. At this point, a new paradigm emerges that seems to answer the questions in a better way. Kuhn refers to the adoption of a new paradigm as a revolution, but Kuhn's theory of paradigms governing science is itself revolutionary.

The theory of paradigms helped confirm the view that more than empirical factors are involved in scientific knowledge. These factors include the influence of the social and cultural context as well as the institutional and political environments in which scientific work takes place. For Schuster, paradigms do not follow each other so much as exist simultaneously. They can be added to and changed by individuals over time (1995a: 236-238).

So perhaps the existence of multiple paradigms that can govern our view of the world is why there is both a pro-1080 discourse and an anti-1080 discourse that exist side by side. It is also why we have various paradigms in conservation, such as restoration ecology, invasion biology and compassionate conservation. Consequently, while pro-1080 advocates claim their case is based on science, we can more accurately describe it as based on paradigms.

Now that we have considered the nature of science by presenting various understandings of what facts are and the role paradigms play in science, we will move on to examining the social construction of nature, conservation and ecology.

The Construction of Nature and the Birth of Ecology

Growing up near the Hutt River (Te Awa Kairangi) in the lower North Island of New Zealand remains a vivid memory for me. To reach the river from our home, we crossed the road, descended an embankment and walked for ten minutes along a track. The track cut across a six-hectare area of land. Paths passed through the thick grass, assorted bushes and trees (mainly pine trees) where people and animals had walked. Various birds frequented the area, especially magpies, which seemed to be fond of the pine trees. One also came upon rabbits, hedgehogs, the occasional possum, and fish and eels in the river. When stumbling upon a possum trap, I would disable it. A golf course was at one end of the area, near an old speedway, where a circus appeared every few years, and a dog clubhouse was at the other end. The dog club served as a second home for me from about twelve to twenty years of age. Getting from where I lived to the dog club took fifteen minutes. I recently visited the area and stayed with my brother, who lives nearby. Many pleasant memories flooded back to me as I relaxed in his house and walked by the river where we played as children.

For us, the above place was a wilderness, a garden of Eden and a perfect place for children. Fittingly, the small residential area where we lived was named Avalon, a name that invokes a mythical paradise. However, living in this paradise, we did not know that the long grass, the gorse, the pine trees, the willow trees, the hedgehogs, the possums and the magpies were considered 'introduced' species and 'pests'. After all, most of

them had been in New Zealand longer than most people in the street where we lived. Nevertheless, we liked the place the way it was. Today, some might consider that area to have been agricultural land allowed to go to waste. For us, though, the area was enchanted, a natural adventure playground.

Then one day, 'developers' arrived and bulldozed the land to construct a park. There is now a modern adventure playground at one end. Frequent mowing keeps the new grass short, and dogs must be kept on leads. There is a tennis court where a man, who walked daily on the tracks by the river with his dog Trigger, used to light his fire and feed his dog. Also, the road between the park and what was our house has become busier, as has the road on the other side of the river, now a highway. More people may use the park than before the developments. They might perceive the work put into the area as progress. Still, my experience informs me that the place was more natural, beautiful and exciting than before the developers appeared.²⁰

Living in the locality described above helped develop my interest in nature. In intermediate school, nature studies increased my interest and gave me a more formal understanding of nature. Another subject taught at school was social studies. Even though I first preferred nature studies, I became more interested in the second subject. This interest led to tertiary studies in anthropology, philosophy, theology and psychoanalysis some years later. These subjects all dealt with human beings only, so they would come under the label of social studies or human only studies. Animals were understood in these subjects to be devoid of spirituality, culture and rationality, and thus of interest only to the natural sciences. While enjoying my education after high school, I sensed a lack. The natural world in which people and other beings lived was only barely mentioned. However, in recent years, most of these subjects have made room for 'the more-than-human' world.

We were presented with two opposite subject areas in primary school: nature studies and social studies; biology and culture. This dichotomy, where there is a concentration on nature in one subject and culture in another, continued to be in existence during my tertiary studies. But even with the concentration on

nature in some subject areas, it was not easy when writing this book to find an appropriate definition of nature. This difficulty may be because, as philosopher John Passmore (1980: 207) says, the term is difficult to define. For example, some people understand humans as being part of the natural world, while humans are outside of nature for others. Some people enjoy nature by gardening, while others enjoy it by walking through forests or on beaches. Still, others feel close to nature by caring for animals, while others feel closer by hunting and killing them. Likewise, nature may be sacred for some, but for others, the natural world exists for the benefit of humans. It has a utilitarian value. These two views of nature can be observed in the 17th century philosopher Thomas Hobbes' view of life in nature apart from civilisation as 'nasty, brutish and short' and the 18th century philosopher, Rousseau's view of nature as pleasant and benign. According to Rousseau, 'civilization' and 'modernity' resulted in alienation from nature. 'Nature', then, can mean different things to different people.

Given these different ideas of nature, we need to consider a person's understanding of what nature is when discussing environmental problems with them. We do this because what a person understands by the term 'nature' will influence how they view issues involving non-human life and the environment. So, for example, predators are considered a problem in New Zealand. To understand the solution given by the authorities, 1080 poison, we need to consider their understanding of nature which will be informed by their values, beliefs and training. I show in this book that the controversy over 1080 is more about one's view of nature than whether one's beliefs are scientific or not. For many, the discussion focuses only on scientific considerations and not on the interpretations of nature used in scientific writings on 1080. Unfortunately, this can lead to a skewed view of the issue that is reductionist in nature and that the holder of the view is unaware of.

Nature in early European Culture

There are three major views on the causes of today's environmental problems. First, there are those, such as cultural

historian Thomas Berry (1993: 53), who believe that humans became increasingly alienated from nature at the start of classical literate civilizations 5,000 years ago and that this was the major cause of today's environmental problems. Second, the view of historian Lynn White, seen in his influential (1967) work, 'The Historical Roots of our Ecological Crisis'. Here, he states that today's environmental problems result from Judeo-Christian ideas of 'dominion' and 'subduing the world'. A third orientation, significant for our discussion, is that of ecofeminist philosopher and historian of science Carolyn Merchant (1980), who takes science and technology, as developed in the 17th century, as the primary contributors to today's environmental problems.²¹

For environmental philosopher Helen Barnard, the three positions above all assume the loss of a perfect world, a state of 'primordial harmony'. This loss is what restoration ecology, influential in New Zealand conservation, assumes. Such a position leads to the wish to return the world to an earlier state, which in New Zealand is the precolonial state. However, Barnard questions the accuracy of the assumption of the existence of a primordial harmony. She maintains humans' exploited nature in most societies, if only for survival reasons. To her, environmental degradation is determined more by the possession of advanced technologies than by who has the right philosophy of nature (2006: 36-46, 52-52). She draws examples from ancient Greece and Roman society to show the existence of environmental degradation at the start of European civilisation (2006: 51-52). Likewise, Coates points out that early European societies faced deforestation, soil degradation, pollution and animal extinctions (Coates, 1998: 24-28, 38). For Barnard, then, no primordial harmony ever existed in Western civilisations.

Furthermore, environmental problems occurred not only in Western societies but also in China, Japan and other countries. For example, Conrad Totman (2014) examines environmental degradation in Japan, as does Edmonds (1994) in China. In addition, Richard Edmonds (1994) conveys in the title of his book *Patterns of Lost Harmony: A Survey of the Country's Environmental Degradation and Protection*, the existence of a belief in China of a fall from an original harmony. We even have the degradation of the

environment in pre-European New Zealand, where 40% of the forest was burnt before European settlement (Wilmschurst, 2007: 2). Within the first two hundred years of Māori settlement, thirty-eight birds became extinct because of hunting and introduced predators. Another nineteen species became extinct since European settlement (NZ Ecology, 'Extinct Birds': accessed 10 October 2020).²² Therefore, to use the period just before European arrival as a benchmark for returning to a pristine environment implies that environmental problems existed only as a result of Western civilisation, a simplistic understanding of the problem of environmental destruction.

In ancient Greece and Rome, as in many cultures, ideas of nature are intertwined with religious, philosophical and scientific discourses. We can say the same regarding views of nature today, although perhaps to a lesser extent, and these connections may be less noticeable. In the next section, we will show how Christian religious thinking, with its concept of 'dominion', merged with technological and instrumentalist thinking. Moreover, even when pro1080 discourses use scientific language, they sometimes use religious imagery such as paradise, a fall from paradise, plagues of Biblical proportions and the restoration of a former perfect world (see chapter 8).

In ancient Greece, gods were often associated with the natural world, including Zeus (sky), Poseidon (sea), and Demeter (plants). Temples built on sacred ground protected land, animals and plants (Coates, 1998: 30-31). Both Greek and Roman society had a genre of 'pastoral poetry' as observed in Greece by Theocritus (300-260 BC); and in Roman society by Virgil (70-19 BC) and Horace (65-27 BC) (Coates: 1998: 35). Roman society exalted the Arcadian virtues of a simple rural life on the land (Coates, 1998: 35).

Despite the Arcadian features of Greek and Roman society, we cannot view them as complete utopias. Environmental problems also existed in these societies, as we have seen. As in New Zealand and other societies at present, these societies had their preferred animals. So, in Greek and Roman civilisation, one could write positively about pigeons and nightingales but not about hawks or other predators (Coates, 1998: 36). And even

though a legend exists that a female wolf nurtured Romulus and Remus, the founders of Rome, wolves suffered widespread persecution in Roman society (Coates, 1998: 36). Further, we find in Roman society some of the greatest feeling for nature within hunting and gladiatorial combats with animals. At one such event, gladiators massacred 5,000 animals daily for one hundred days (Coates, 1998: 37).²³ I am not sure if 1080 poisonings have ever reached that number, maybe they have. Perhaps the numbers will increase even more as the passion for killing increases, and we use even more poison to return to a utopia that never existed.

Regarding Greek philosophy, we often associate Plato with the idea of the material world and the body being negative. In this perspective, the mind is considered a prisoner of the body and of the material earth that we need to get away from to a more immaterial existence. But another feature of Plato's philosophy involves a more positive assessment of the earth and body—the belief in a world soul that makes the earth a living being (Armstrong, 2004: 173, 175). Philosopher David Fidler emphasises the notion of a 'world soul' more than many other commentators on ancient philosophy. In his opinion, this belief existed for over eight hundred years before the beginning of the scientific revolution with its mechanistic mentality (Harcourt-Smith, 2020). A related notion that existed before the scientific revolution was the belief that the world was a living being and a nurturing mother (Merchant, 1990: xvi, 3). The concept of 'world soul' is like the Māori notion of 'mauri', the life force that every being possesses. There is also in Māori mythology a cosmic couple, Rangi (Sky Father) and Papa (Papatūānuku-Earth Mother), who cause the world to come into being.

While ancient science, referred to as 'natural philosophy', emphasised observation, it regarded experimentation as changing a natural entity artificially, thus missing the true nature of an object (Schuster, 1995a: 189-190). Moreover, in Greek philosophy, contemplation of the world was considered to have more value than experimentation (Schuster, 1995a: 190). Also, the idea of teleology (everything has a purpose) played an essential role in 'natural philosophy'. This view is not the case in modern mechanistic science, where events are seen to occur because of

accidental causes rather than for a purpose.

For Barnard, though, teleologists and non-teleologists still gave humans a higher value than nature. They both considered that nature existed to serve human needs (2006: 80, 82-83). Hence, Aristotle says, 'Plants are created for the sake of animals, and the animals for the sake of men' (Passmore, 1980: 15). Stoics would agree (Passmore, 1980: 14). Because of this view of the value of humans and nature, Passmore views Aristotelian and Stoic philosophy as anthropocentric (regarding humans as the most important element of existence) (1980: 13). We also notice this anthropocentric perspective in some ecological practices today, where animals are viewed as means to an end rather than as ends in themselves.

Even though ancient Europeans understood humans as more valuable than plants and animals, Merchant, Fideler and Schuster thought a mechanistic view of nature did not exist before the scientific revolution. The atomists of the 5th century BC may have been an exception to this view. Early mechanistic views assumed nature to be inert, like a machine without purpose (teleology) but determined by mechanistic laws with God as its supreme engineer (Fideler, 2014: 3-4). Mechanism emphasises quantitative phenomena rather than qualitative ones like beauty, form, purpose or value. Both Schuster (1995a, b) and philosopher of science Joshtrom Kureethadam (*The Philosophical Roots of the Ecological Crisis: Descartes and the Modern Worldview*, 2017) maintain that the mechanistic view is still present in science. This mechanistic view can be observed in many pro-1080 writings and in DoC's practice of spreading a chemical, 1080, over extensive areas of New Zealand by helicopter. There is also a view of 1080 as a 'useful tool'. The poisoning is conducted efficiently without regard to the suffering of the poisoned animals. Such ideas are based on mechanistic and instrumental views of nature that have at their centre the idea that nature is in existence primarily for humans.

Christian views of Nature

The Old Testament has disturbing passages in Genesis and Psalm 8 which seem to imply it's all right for humans to dominate the

world. In these texts, God gives humans dominion over the world and a command to subdue the earth (Gen 1: 26-28, Psalm 8). The passages indicate a strong presence of anthropocentric thinking and the belief in human exceptionalism, where animals and nature exist for the sake of humans. This is the central postulate of Lynn White—Christianity is anthropocentric—and this belief, informed by the above biblical passages, has led to our current disastrous environmental situation.

However, White's position is open to criticism. As already mentioned, the Greeks and Romans also regarded the world as existing for the sake of human beings. Environmental issues existed in non-Christian cultures as well. For this reason, Coates concludes that environmental difficulties stem more from population and technological capabilities than from ideas and ideologies (1998: 26-28). And not everybody sees the West's contribution to environmental concerns as unfavourable.

In contrast to Merchant, Fideler and others, historian Michael Pak argues for the West's positive contribution to an environmental philosophy that is neither imperial nor Arcadian but utilitarian. Opportunities and sustainability play a crucial role in this orientation (Pak, 2011). We can consider the pro-1080 position as also based on utilitarian and instrumental concerns, where it is justifiable to use living beings as a means to an end. Therefore, killing millions of possums, rats and stoats is justified in order to create a better environment.

Like today, where both Arcadian and imperial paradigms are present in conservation, early Christianity contained rival views on the natural world. Theologian Paul Santmire describes these as a 'spiritual motif' or 'ascent theology' (where there can be communion with a transcendent God above the world) and an 'ecological motif' (where God is present in the natural world). Elements of Platonic philosophy that perceived the world as evil influenced the spiritual motif. Such a viewpoint led to an extreme ascent theology espoused by some early Christians. Other early Christian theologians, such as Irenaeus, opposed the theology of ascent despite its influence. For Irenaeus, God was engaged in the entire creation, having created the world in the first place and directing it to its purpose (Santmire, 1985: 33-44). So, God takes

flesh in Jesus to benefit the entire creation, not just humans. Santmire finds in Irenaeus an example of the emergence of an ecological viewpoint where God's love for creation overflows. Such a position contrasts with that of Origen (185-254), who followed the Neo-Platonic philosopher Plotinus. In the eyes of Origen, nature served only the purpose of offering people a place for salvation (Santmire, 1985: 49-52). Even though the church condemned Origen's work, Santmire holds that this 'spiritual' perspective became dominant in Christianity (1985: 53). Chrysostom, an early church theologian (c. 347-407), had similar views to Irenaeus (c. 349-407). In the *Homilies on Genesis*, Chrysostom wrote that the whole of creation is good and that this applied to:

not only plants that are useful but also those that are harmful, and not only trees that bear fruit but also those that bear none; and not only tame animals but also wild and unruly ones ... not only inhabited land but also the unpeopled; not only level plains but also mountains and woods. Among birds, it was not only tame ones and those suitable for our food but also wild and unclean ones, hawks and vultures and many others of that kind. Among the creatures produced from the earth, it was not only tame animals but also snakes, vipers, serpents, lions, and leopards.

(Chrysostom, 1986)

Chrysostom would likely have added rats, stoats and possums to his list had he lived in New Zealand in the 2020s.

One of the most influential Christian thinkers, Augustine of Hippo (354-430), is often portrayed as having a negative view of the material world and representing the ascent spiritual motif in theology. But Santmire argues that one can recognise an ascent motif in early Augustine, where his Manichaean background influenced him, while in his later works one can find an 'ecological motif'. Thus, we perceive in Augustine's later writings his postulation of the beauty and goodness of creation in its own right, not only in how it meets human needs (Santmire, 1985: 55-73). Nevertheless, Augustine is anthropocentric in his ideas. He perceived a significant difference between humans, made in the image of God and possessing rationality, and nonhuman animals

who existed for the sake of humans (Howell, 2008: 949-950).

Even though we have these two approaches in Christianity, Peter Harrison, a historian, known for his writings on the religious foundations of modern science (*The Fall of Man and the Foundations of Science*, 2007) suggests that in looking at theological texts, we should not read them literally. They must be placed in the historical and literary contexts of the time when they were used (1999). And the author goes on to explain how people in the earliest Christian periods understood the phrase 'subjugation of nature' as an allegory to do with forces within humans that needed to be controlled. Therefore, the term was not so much about subjugating or controlling nature as it was about using what we know about nature to understand forces within us that people at that time would see as spiritual issues and what we would call psychological issues (1999: 91-93). The change in view to a more dominating attitude came into being with the scientific revolution and a reductionist attitude to what people had previously seen as metaphor and allegory.

However, in the early medieval period, things changed. Santmire describes this time as one of despair, political instability and violence (1985: 77). In his view, theology reverts to Origen's position of nature being hostile and a constraint to be overcome. As a result, the ascent motif emerged again. We can notice, according to him, this ascent theology in the work of Benedictine and Celtic monasteries (1985, 78-79). In contrast to this view, René Dubos, a well-known microbiologist and conservationist, claims that the monasteries revived a positive view of nature. And although Dubos took the Franciscan way of life to be reverent, he also perceived it as passive regarding its attitude toward nature. He identified both a reverent and active attitude towards nature in the Benedictine way of life, one associated with the concept of stewardship (Dubos, 2006: 56-59). But despite a negative attitude towards nature at various points in Christian history, Dubos maintained that Christianity was no more harmful to the environment than any other religion or culture.

As religious orders such as the Franciscans and Dominicans developed during the 12th century and cathedral schools flourished before universities came into being, the Platonic notion

of a world soul became more pronounced, along with the allegorical idea of Goddess Natura. We can find these conceptions in the writings of those at the influential Chartres cathedral school (Fideler, 2014, Chapter 5). These beliefs suggest the existence of an ecological motif. Nonetheless, most theologians adhered to an ascent motif. This included Aquinas (1225-1274), Bonaventure (1221-1274) and Dante (1265-1321). According to Aquinas, animals exist for humans and humans have no obligation to them. These three theologians, according to Santmire, began by affirming a positive view of nature. But they moved on to suggest that humans should look beyond the natural realm to the spiritual one. Hence, they embody an ascent theology (1985: 94, 101, 105). One wonders if the rise of an ascent theology was related to the medieval plagues, which killed many people. After all, people would find it difficult to be optimistic about nature if it killed them. However, St Francis of Assisi was the most notable example of a religious figure in the medieval age with an ecological motif. He focused most of his life on living in harmony with the natural world.

Eventually, according to Santmire, the ascent theme disappeared with Luther and Calvin, and signs of a positive view of nature appeared (1985: 121). Even so, this view became secondary to human salvation and redemption concerns. Both concerns can be perceived in the teaching of justification by faith and grace alone, but this teaching only applied to humans. It contrasted with the Catholic idea of grace and nature, in which grace works with nature to perfect it. So, Santmire concludes that by the 19th and 20th centuries, 'Protestant theology had 'washed its hands of nature, thus allowing modern industrialism 'to work its will on nature' (Santmire, 1985: 122).²⁴

Manussos Marangudakis (2001), a professor of sociology, provides an interesting perspective on the contribution of Christian teaching to the mechanistic approach to science. He argues that Western Catholicism contributed to the rise of a super-rationality and a utilitarian approach to life, leading to modern secularism. The more active approach, as opposed to the contemplative approach, accompanied a vast technological development between the 6th and 15th centuries. For

Marangudakis, however, Protestants possessed a more aggressive attitude toward nature, with Baptists, Quakers, Mennonites and Pietists being chiefly responsible for the Industrial Revolution (2001: 18-29).

In addition, there was an increase of emphasis in Calvinism on humans transforming the world rather than just living in it or contemplating it. Such a view influenced the rise of industrial society (Santmyre, 1985: 126-127). With the Industrial Revolution came an increase in the exploitation of the Earth. For Max Weber, Protestantism and its work ethic played a large part in the rise of capitalism and industrialism (Klein, 2019: 418). Klein holds that Protestantism 'sees the earth as a storehouse of resources explicitly available for human exploitation' (Klein, 2019: 418). And for Weber, Protestantism led to the world's disenchantment and stripped it of its mystery and sacredness (Weber, 1946, 1992). According to Weber, the new society that developed led people to become trapped, as if in an 'iron cage', with attitudes to the world limited to efficiency, (instrumental) rationality and control (Weber: 1930: 181). We can find all these attributes in the mechanomorphic features of organisations like DoC, with their cold, rational, objective approach to the non-human animals that threaten these organisations' power over nature.²⁵

But this mechanistic perspective does not have to be the defining feature of Christianity. After all, the first to use the term 'animal rights' was said to be the 17th century Thomas Tryon, who followed the German mystic Jacob Boehme (Stuart, 2007: 71-72). In addition, Christians played an essential role in founding the SPCA and the anti-vivisection movement during the 19th century. Furthermore, as mentioned in the introduction, there has been a revolution in Christians' perspective on nonhuman animal life. One notable example is the writings of Anglican priest and Oxford professor Andrew Linzey, who founded the Oxford Centre for Animal Ethics in 2006.

Modern Science and Dominating Nature

The third factor mentioned by Barnard regarding the origins of modern environmental problems is modern science. With the rise of modern science, as observed in the works of Francis Bacon

(1561-1626), Galileo Galilei (1564-1642), René Descartes (1596-1650) and Isaac Newton (1642-1727) (theologian, scientist and mathematician), the industrial-mechanical view of nature became more widespread. Value, purpose, harmony and quality, all once considered attributes of nature, became subjective phenomena (Merchant, 1989: 277). Colour, taste, smell and pain also became subjective phenomena (Schuster, 1995a: 191). The belief in a world soul disappeared, and science became more reductionist. Humans perceived themselves to be outside of nature and masters of it. And while we have seen that some viewed the Biblical passages in Genesis on dominion and subjugation as a reason to dominate nature, Harrison argues that these passages only acquired the meaning of humans having a responsibility to control and use nature for their own purposes in the 17th century (1999: 96-98). The change in interpretation would seem to parallel a shift from a Catholic metaphorical understanding of scripture to a Protestant literal approach.

Both Merchant and Fideler regarded Bacon (the father of modern science) as having an imperial orientation to nature. We observe this when Bacon speaks of nature as 'bound' into service and made a 'slave' of mankind, making an analogy with torture by mentioning the inquisition (Harcourt-Smith, 2020; Fideler, 2014: 5, 139-140; Merchant, 1980: 168-172).²⁶ Descartes extends this imperial approach even further by describing humans as the 'masters and possessors of nature' (Merchant, 2005: 46). He considered nonhuman living beings to be insensitive, soulless and mechanical. So, the frightened noises of a dog are nothing more than noises made by a machine and not a sign of suffering or pain (Fideler, 2014: 4; Harcourt-Smith, 2020). It is easy to perceive an industrial-mechanical view of nature in this understanding of the sounds of a dog as just noises.

In relating Descartes' view of animals to conservation in New Zealand, we can consider 1080 advocates as possessing a mechanistic point of view seen in their denying or disregarding the suffering of nonhuman animals lying in the forests after being poisoned. There is present a refusal to acknowledge the subjectivity of those animals. A similar 'dominating nature' mentality is prevalent, with the belief that humans are in charge

and know what is best for all living beings. Last, pro-1080 people often repeat the instrumental/mechanistic refrain '1080 is a useful tool' as if this idea of it just being a tool shows that the poison is innocuous, and its use justified.

Like the views of Fideler and Merchant, animal rights activist and lawyer Jim Mason maintains that human mastery and dominion laid the foundation for modern science. He points to the subject of biology, which he sees as requiring 'a lot of cutting open' of non-human animals' (Mason, 2005: 38). Also, he understands the mechanistic theory behind the science as helping to justify the carrying out of 'ruthless, often violent deeds of nature conquest' and giving 'a renewed license to kill' (2005: 38). Of interest to us, Mason also adds the 'eradication of pests' to the list of practices involved in conquering nature (2005: 41). In Mason's view, science has taken a more dominionist stance than the earlier religious societies from which the right to claim dominion came about (Mason, 2005: 37-39, 41, 48).

As modern science developed within the mechanistic foundations laid down by Bacon and Descartes, it sought to eradicate any form of subjectivism from its work. An emphasis was placed on objectivism, quantification, instrumentalism and mechanistic rationality (Worster, 1994: 28-29, 39-40, 91). But more than Greek philosophy, with its speculative stance towards nature, modern science became welded to utilitarian concerns and aligned with the growth of industrialisation (Worster, 1994: 30, 52-53, 256). A view of the world 'as a 'mechanical contrivance' and as existing for the sake of humans emerged (1994: 29, 37). Humans became engineers with the authority to change nature as they pleased (1994: 29, 39). Even the naturalist pastor John Bruckner, (18th century), who had questioned the mechanical model, ended up saying that humans had a mandate to 'watch over all the other species, and maintain the balance betwixt them' (Worster, 1994: 50). This was the case Worster wrote 'even if that duty meant waging all-out warfare against man's natural enemies' as nature could endure man's violence (1994: 50). We might well take the mandate given to humans at that time as coming from DoC's rulebook. As a result of this mechanistic orientation, social critic Herbert Marcuse criticises a central ideology of modern life

in *One Dimensional Man* (1964): a one-dimensional overvaluing of a robotic, technological approach. This robotic technological approach is what we discover in the unquestionable acceptance of 1080 poison.

Nevertheless, despite the mechanical view of nature becoming dominant in the 17th century, alternative viewpoints emerged, as with the naturalist and pastor Gilbert White (1720-1793) and those associated with the Romantic movement. Goethe (1749-1832), Wordsworth (1770-1850) and Coleridge (1772-1834), all of whom could be called Romantics, opposed the idea that humans ruled the world. Perhaps what we need today is another view of nature, a more Romantic one. And this view is what we might get if we join the subject of ecology with the environmental humanities and compassionate conservation.

Rise of Ecology and Conservation

Ecology, conservation, and environmentalism have long piqued people's interest, though they are now studied as academic subjects. The three areas overlap, and a person can be an ecologist, a conservationist and an environmentalist, as was Aldo Leopold.

Ecology can be defined as 'the study of the interrelationships of organisms with their environment and each other' (Smith and Pim, 2022). Conservation is a branch of ecology and evolutionary biology concerned with preserving and managing biodiversity. And environmentalism is about concern for the environment and actions or advocacy for limiting the harmful effects of human activities on the environment (Davies, 2020: 259).

Theophrastus (Aristotle's pupil), 371-287BC, provides an early example of ecological writing that emphasises the interdependence of plant life and its environment. He is sometimes called the father of ecology (Hughes, 1985). Another example can be seen in John Evelyn (1620-1706), considered Britain's first conservationist, who published a tract, 'Fumigium', that suggested planting gardens to help with air pollution in London. His classic work, 'Sylva' (1664), discusses the conservation of forests. In the fourth edition, 'Dendrologia: An Historical Account of the Sacredness and Use of Standing

Groves', he discusses the idea that sacred groves have both a utilitarian and an aesthetic value.

So, we perceive in Evelyn a somewhat Acadian viewpoint, a science inspired by the awe of nature. The same Acadian position can be discerned in the work of English pastor and naturalist Gilbert White (1720-1793), sometimes referred to as the father of modern ecology. He can be seen as being at the forefront of a movement for a non-mechanised science. White studied butterflies, earthworms, birds, snails and other creatures near his home village, Selbourne. Writing about noxious insects, he says that it is important to know 'of the life and conversation of these animals' when trying to prevent their destructiveness (White, 1924: 87). White's work is seminal 'for the modern study of ecology' (Worster, 1994: 5).²⁷ He brought to ecology his attentiveness, emphasis on the local and reverence for nature (King, accessed 15 Nov. 2022). These are attributes we could well emulate today. The Arcadian movement in ecology and conservation that White personifies advocates a simple life for people in peaceful coexistence with other beings (Worster, 1994: 2). Besides White, another critical figure in the emergence of ecology was Von Humboldt (1769-1859), who also embraced Arcadian philosophy. The poet Goethe had an enormous influence on Von Humboldt. And Humboldt influenced Darwin, Haeckel, Marsh, the transcendentalist Emerson, Thoreau and John Muir, all of whom possessed an Arcadian view of nature.

We see from the above account of the beginnings of ecology that it does not follow that every scientist adopted the utilitarian point of view and the technological idea of nature. In some, science was inspired by awe and listening to poets and the subjects of their study—nonhuman animals. The same situation applies today, although we more often hear the imperial view being propagated.

The movement in ecology that contrasts with the Arcadian approach is the imperial one, deriving from Francis Bacon and seen in Linnaeus' (1707-1778) classification scheme. Central to the imperial perspective is establishing human beings' dominion over nature by 'reason' and 'hard work' (Worster, 1994: 2). The imperial orientation has conflicted with the Arcadian view since

the beginning of modern ecology and conservation, if not before, and continues to do so. We can see the presence of the imperial approach within academia and in some conservation thinking. The Arcadian approach is also present within conservation but has a stronger presence in environmental movements (1985: 17-18). As an example of the presence of these views, we note the experience of Reed Noss, a conservation biologist. In his training, he accepted the imperial approach to conservation with its notions of science being value-free, non-emotional, amoral and concerned with 'plain facts'. But, after reading Aldo Leopold, he realised that a biological scientist could also be a naturalist and talk about things like 'beauty, love, and right or wrong' (Noss, 1998). This level of awareness could be compared to some DOC employees who have compassion for the birds they care for rather than just being interested in biodiversity and ecosystems. But despite this, they give little value to the rats and possums they come across. They are only interested in getting rid of them. DoC's instrumental reasoning is linked to a collectivist belief (the group is valued over the individual) and a belief in nativism (an environment created by humans is unnatural, except for, of course, interventions by ecologists). See Wallach, Batavia, Bekoff et al. (2020) for more on these concepts.

We also have Charles Darwin's paradigmatic work (1809-1882), characterised by the theme of struggle and competition for survival. Darwin's work promoted a view of the cruelty and savagery of nature following 'blind physical laws' (Worster, 1985: 122-123). Darwin believed that the cruelty and chaos of nature required civilisation and effort in place of Arcadian passivity to make the world more enjoyable (Worster, 1985: 119-128, 155-166; 171). Nevertheless, Darwin kept some Arcadian ideas—a biocentric perspective involving the relationship between living beings in a 'community of descent' where humans can advocate for animals (Worster, 1985: 189-184).

We now turn to the physician, zoologist, naturalist and artist Ernst Haeckel (1834-1915). Haeckel coined the term 'ecology' (from the Greek *Oikos*, meaning home, place of life) and established a new science, ecology, which studies the relationship between organisms and their environments.^{28 29} He understood

the discipline as a branch of biology related to physiology. Yet, ecology did not become a separate branch of knowledge until the 1920s, and even then, it was not universally accepted until the 1960s. From the start, it was more of a view within the field of biology than a distinct discipline (McIntosh, 1985: 1).

Even when ecology became a discipline in its own right, it was still regarded as drawing from other fields, such as geography, chemistry and biology. Various sub-disciplines developed, including landscape ecology, population ecology, animal ecology, plant ecology, conservation, restoration ecology and invasion biology. Typically, ecology is associated with environmental protection, and environmentalism is understood as a more activist movement with strong ethical views. Ecology is considered more value-free and academic. A few people, though, have raised the question of whether ecology is a 'hard' science like physics or more of a 'soft' science (McIntosh, 1985: 1-2, 5, 17, 25-26; Pigliucci, 2002: 'Are Ecology and Evolutionary Biology soft sciences').

According to some, including the founder of conservation science, Michael Soulé, ecology is founded on various disciplines, such as environmental philosophy, ethics and the social sciences. While these connections may be perceived as a shortcoming, they can also offer ecology the breadth of views necessary to cope with its complex subject matter. Not understanding the interdisciplinary nature of ecology, pre-1980 adherents may perceive ecology and conservation to be more unified and more of a hard science than they are.

In the history of environmental protection, we find diverse figures; John Evelyn (1620-1706) in England, John Perkins Marsh (1881-1882) in America, and Thoreau, Muir, Roosevelt and Aldo Leopold. Leopold (1949) wrote a classic text, *The Sand County Almanac*, which helped form the basis for viewing the environment as having intrinsic value.

Conservation biology became a distinct field after the First International Conference on Research in Conservation Biology in 1978. For Michael Soulé, one of the leading figures in establishing this discipline, conservation is a crisis-oriented, mission-centred science, an art and a multidisciplinary endeavour (Soulé, 1985:

727). He believes conservation depends on the social sciences and has ethics at its core (Soulé, 1985: 727-728). Soulé considers the values of ecological complexity, diversity, evolution and the disvalue of premature extinction among his normative postulates, as well as holding that biotic diversity and species have intrinsic value (1985: 730-731). In this perspective, species and ecosystems have intrinsic value but individual animals do not. This view has created a divide between those who believe that individual animals have intrinsic value and those who believe that the ecosystem or species has intrinsic value. In New Zealand, this conflict manifests in the positive regard given to the kiwi and other native birds as a species, but not to individual animals apart from their contribution to the group.

As with many other fields of study, no uniform complete agreement exists in ecology and conservation. For example, conservationists Peter Kareiva and Michelle Marvier (2012) question aspects of Soulé's understanding of conservation. In their 'New Conservation', they consider that conservation should be less philosophical than Soulé understands it. To them, it should be more utilitarian, more 'scientific', preferring realism and pragmatism rather than sticking with an intrinsic value approach. Even so, Soulé, in a 2013 article titled 'The New Conservation', rails against conservation becoming what Kareiva and Marvier suggest. He maintains it should be based on the 'intrinsic value' of nature rather than diluting its purpose by integrating ideas of human and economic development.

Soulé's ideas are influential in New Zealand conservation, where value is placed on species instead of individuals. Yet, the importance he places on philosophy and social science involvement in conservation is less valued. For example, people often advise me on 1080 sites to drop the philosophy and look at the facts. This emphasis on facts is a characteristic of empiricism, which we have seen is only one idea of what science is. One fundamental problem with this emphasis on facts is that it can lead to a worship of facts and a refusal to engage in rational discussion (Feyerabend, 1978: 46).

Other disciplines related to ecology and conservation are

restoration ecology and invasion biology. Conservation ecology is about the conservation of species and ecosystems. Conservation in the United States stresses the utilitarian value of nature to humans. Preservation is understood to be based more on the intrinsic value of nature. The second discipline, restoration ecology, is aimed at ‘assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed’ (The Society for Ecological Restoration, 2020). It focuses on humans intervening to restore the environment to its former state. Conservation biology, like restoration ecology, has principles that have been questioned, such as its emphasis on the past, its static nature and its strong value base (Choi, 2007).

The third related field is invasion biology. In 1958, Charles Elton, an eminent zoologist and animal ecologist, wrote: *The Ecology of Invasions by Animals and Plants*. His book outlined his concerns about introduced species. In professor of biology Mark Davis’ opinion, after the publication of this book, scientists referred to ‘introduced species’ without using military terms such as aliens, invaders and exotics, which Elton used, and many ecologists use today (2006: 36-37). An exception is the work of biologist and ecologist John Harper. In one comment mentioned by Davis, we notice Harper’s warlike understanding of invasion biology: ‘The movements of man and his goods have resulted in a bombardment of areas of land and sea by alien species’ (Davis, 2006: 37). Freelance writer George Laycock’s (1966) work, *The Alien Animals: The Story of Imported Wildlife*, also conveys this negative view of introduced species. This use of a war metaphor can be observed in the titles of two chapters, ‘How the Grey Squirrels Invaded England’ and ‘The Conquering Mongoose.’ But apart from these works, introduced species were not classified as dangerous until the 1970s (Davis, 2006: 38-39). The vitriolic style of describing introduced species increased in the 1980s. The title of Carolyn King’s book (1984), *Immigrant Killers: Introduced Predators and the Conservation of Birds in New Zealand*, is a good example of this. That said, what we perceive in this history of conservation and invasion biology is that they are affected, like all subjects, by the trends of the day and various paradigms.

Invasion biology became a discipline in its own right in the second half of the 1980s. From then on, biological invasions became a popular topic of study (Davis, 2006: 42-45). It became a dominant paradigm related to conservation biology and restoration ecology. In the late 1990s, though, doubts arose regarding the absolute negativity of introduced species. In 1989, biologist James Brown questioned a growing 'irrational xenophobia' that disparaged introduced species (Davis, 2006, 49). Among other critics of this scientific paradigm were Davis himself (2009) and eighteen others who authored an essay, 'Don't Judge Species on Their Origins' (Davis et al., 2011). Other writers who question the invasion biology paradigm include Ken Thompson, an ecologist and lecturer in ecology; Jamie Steer, a New Zealand ecologist; Wayne Linklater, a former New Zealand ecologist; Chris Thomas (2018), an ecologist and author of *Inheritors of the Earth: How Nature is Thriving in an Age of Extinction*; environmental philosopher Mark Sagoff; science journalists Emma Marris (2013) and Fred Pearce (2015). The last person mentioned, Fred Pearce, authored a book, *The New Wild: Why Invasive Species will be Nature's Salvation*. In the book, he questions whether the concern over foreign species is just 'green xenophobia' (2015: 1).

Despite the above criticisms of the invasion biology paradigm, it is still dominant in conservation and often presented as the only scientific view. We perceive it, of course, in conservation in New Zealand, where there is an attempt to destroy all 'pests'. Unfortunately, we do not have Davis' work acknowledged. Davis criticises the invasion biology paradigm for its use of the word 'invasion', its value-based approach, its use of militaristic language as well as its nativist assumption. Still, it is rare to come across invasion biology described as a paradigm rather than presented as factual. In New Zealand, we rarely hear about alternative perspectives on nature.

A More Compassionate Conservation

Compassionate conservation, founded in 2012 as a specialisation, is a paradigm that differs from restorative ecology and invasion biology. It can offer us new insights into conservation problems. It

can help us understand why so many people accept 1080 poison. The approach is no less scientific than conservation biology, invasion biology or restoration ecology. Species and ecosystems have intrinsic value in invasion biology (Treves, Santiago-Ávila et al., 2019: 137). But Bekoff, a compassionate conservationist, sees people, animals and nature as having intrinsic value (2019). In compassionate conservation, individuals are seen as having sentience and value in themselves that should not be sacrificed for the group. In going about conservation, we must show compassion for the individuals involved. Compassionate conservation gives us the basis for accepting compassion as central to conservation and as a better paradigm than alternatives. It is especially relevant to the question of using poisons.

Conclusion

This chapter has shown that, over time, ideas of nature have changed in both scientific and non-scientific fields. There has never been a time when there has been only one view of nature, although there has nearly always been a dominant view. Knowledge of these diverse views can help us determine how people have come to accept using poison against ‘invasive species’.

While the hegemonic view is that conservation and invasion biology represent the scientific view on conservation, we can now ask more interesting questions. It is not just a matter of determining whether a claim is scientific and providing a list of facts that matter. Instead, it is a question of which assumptions and paradigms are built into any outlook and help determine how we interpret situations. Anthropocentrism, instrumentalism, utilitarianism and nativism are assumptions that inform our scientific view of the world. Many adherents of 1080 adopt these assumptions, even when they are unacknowledged. Those influenced by such beliefs may not even recognise them as their assumptions.

Along with Arcadian and imperial views, paradigms such as restoration ecology, invasion biology or compassionate conservation can influence our perspective on environmental issues. But the most significant factors for understanding our concerns over the use of poison are our ethical views, values and

judgments. Without them, we cannot decide if our actions are right or wrong, good or bad.

Ethical Considerations

In on-the-ground management practice—both in the forest and in urban settings—cruelty towards wildlife and the disregard of its needs predominate. Wild animals are shot, poisoned, trapped, or orphaned because, despite its technological sophistication and statistical rigour, wildlife management continues to operate in an ethical void.

Gosia Bryja ‘Sharing Space with Wildlife Demands Ethics’
(2021)

Respect every living being, in principle, as an end in itself and treat it accordingly wherever it is possible.

Fritz Jahr (1927: 4)

The study of ethics concerns right and wrong behaviour, values, who has moral standing and how we should live our lives. Regarding nonhuman animals, ethics concerns their value, moral status and our duties towards them. Culture, tradition and social norms often dictate what we consider right or wrong, what is valuable and who has moral standing. On the other hand, if we want to better understand how we should treat animals and why, we need to investigate the question of our ethical duties to animals more thoroughly. Furthermore, ethical understanding has developed over time. We need to keep up with these changes. As philosopher John-Stewart Gordon points out, the history of ethics can be considered as being about who belongs or should belong to the moral community. For example, in ancient Greece, men possessed moral standing but not women (Gordon, 2012). Campaigns arose over time, aimed at achieving moral standing for different groups—women’s emancipation, anti-slavery and gay

rights. We also observe such a campaign in the demand to recognise non-human animals as having moral status.

Even though different approaches exist within ethics, this does not mean, as Hansford states, that philosophy and ethics are purely subjective disciplines one can ignore (2016: 6-7). After all, conservation has different approaches depending on the paradigms a particular group has espoused, but this does not invalidate its value. As one writer on ecology says, the history of ecology reveals ‘conflicts, schisms and opposing camps’ (*New World Encyclopedia* 2020). Accordingly, Hansford’s opinion can be taken as just one idea of the place of philosophy in conservation. Paradoxically, though, his view is predicated upon a preconceived notion of what makes a valid argument, the validity of which is the province of logic, a field of philosophy. And, as Peter Singer maintains, most people would judge Albert Schweitzer’s or Martin Luther King’s morality to be better than Hitler’s or the slave traders, showing they accept some moralities are better than others (2002: 243), not just because they happen to like them but because they think they contain a better account of how people should behave. I would hope that the conviction that some ethical systems are better than others would also apply to conservation.

Argument for 1080 Use

As already mentioned, (p.7) explicit ethical analysis is often lacking in writings on 1080. Instead, an emphasis is placed on facts, as if they determine the rights and wrongs of using poison. The argument for 1080 is often put thus:

Premise 1-Species are declining.

Premise 2-This is caused by ‘introduced species’ (pests, invasive species, predators).

Premise 3-1080 poison is effective at killing these predators.

Conclusion-Therefore, we should use this poison. It is morally right to do so.

These claims, sometimes not so direct, appear in Van Vianen et al.’s article (2018), Russell, Innes et al.’s article (Predator Free NZ, 2015), Hansford’s book (2016) and numerous other articles and comments on 1080 use. But when examined, we find the reasoning of the above argument involves two errors: first, the is-

ought fallacy; and second, the assumption that ecosystems and species possess intrinsic value, thus justifying the sacrifice of individuals of one species for the sake of the ecosystem or another species. These errors are present in Van Vianen's and Hansford's work, even though they are sometimes implicit rather than explicit. Another fault seen in Russell et al.'s article is an anthropocentric view that understands conservation as being only in the interests of humans, thereby justifying actions that further these interests.

The is-ought fallacy

In the above argument, premises 1, 2 and 3 are all presented as facts justifying the conclusion. Nonetheless, one can challenge all these statements. For example, premises 1 and 2 assume that biodiversity does not include introduced species. If it did, we could say biodiversity has increased, as ecologist Chris Thomas believes (2018: 112). McQueen disagrees about the efficacy of 1080. She says the poison kills quickly, but predators soon rebound, and the poison can kill native birds (2018: 193-194). Still, I will not argue for or against the truth of the two premises. Even if they were true, would that justify 1080? To suppose so would be to assume the is-ought fallacy, where deciding on right conduct depends on the facts of the matter (1080 will get rid of predators—a fact. Therefore, we should use it—an ought).

To argue for using poison in the above manner would be like saying, especially as a war metaphor has been used in 1080 debates, that dropping atomic bombs is justified because such an action would terminate a war by an aggressor nation. Concerning the bombing of Nagasaki and Hiroshima, Curtis Le May (chief of staff) said later, 'If we'd lost the war, we'd all have been prosecuted as war criminals', implying that the use of atomic bombs was not justified (Malik, 2020). Hence, a country must consider more than the efficacy of nuclear bombs when deciding to use them. And the same goes for 1080. One needs to consider ethics and values, what we ought to do rather than just the results of actions which are only means to an end.

Furthermore, if we look at the dropping of atomic bombs, a weapon of mass destruction, we find an ex-marine commenting that during the killing of Japanese people, they did not consider

themselves as killing humans, but ‘they were wiping out dirty animals’ (Malik, 2020). Clearly, the utterance of the marine is racist. The action was based not on the equality of all humans but on race—it is okay to kill innocent Japanese. But in addition, the marine’s statement implies we can behave however we like towards non-human animals. This statement, as well as being racist, can also be seen as anthropocentric and speciesist (see next section), which is what we can see in the conservation practice of using poison.

Anyway, conservationists already go against the is-ought dichotomy in their thinking since most accept the theory of evolution with its survival-of-the-fittest postulate and facts that back up the theory. But they do not think the truth of the theory of evolution is a good enough reason to let nature dictate which animals should survive, at least when it comes to endangered species. Instead, many consider it their duty to protect these species by eliminating predators. But ethics rather than facts determine this view. To be sure, there is no problem with protecting animals from becoming extinct. But the way of going about it is of concern.

Anthropocentrism and Speciesism

Throughout European history, having moral standing or worth, and thus deserving of ethical consideration, has been viewed as applying to humans. In this understanding, humans possess intrinsic value (inherent value and inherent worth are similar terms), while animals and nature possess only instrumental value—being of use to humans. Consequently, humans have moral standing, and other beings do not. The rationale for only humans having moral standing is that according to Aquinas, they alone possess rationality and have a soul; for Descartes, they possess rationality, consciousness and language; and for Kant, they possess rationality (Duncan, 2019). Also, according to Kant, humans have moral agency and thus have the ability to will certain behaviours rather than being governed solely by instinct (Wilson, accessed Oct. 23, 2022). Thus, humans have a duty not to harm other humans deliberately or treat them as a means to an end. However, no such responsibility exists towards animals. The

idea of human supremacy governs such an anthropocentric view—humans are superior to other beings, and their interests are privileged. The term ‘speciesism’ is sometimes used as a synonym for anthropocentrism. Singer defines speciesism as: ‘prejudice or attitude of bias in favour of the interests of members of one’s own species and against those of members of other species’ (Singer, 2002: 6). But speciesism can also be used when one species of non-human animal is valued over another.

No overt anthropocentrism exists when humans kill certain types of animals for the sake of others if they would do the same with humans of similar ability in a similar situation. Perhaps, though, in carrying out such an act, humans see themselves as having the mandate to decide on and manage what is right and wrong for nonhuman beings, which would be an anthropocentric view.

One conservation paradigm, ‘new conservation,’ has a more overt anthropomorphism than that described above. Thus, if we return to Russell, Innes et al., we observe an instrumental view where killing undesirable species is carried out for the benefit of humans as if this justifies the action. The authors discuss the killing of native birds by predators and then recommend eliminating the predators. The main reason given is that such actions would support ecosystem services such as national identity, recreation, tourism and the economy (2015: 523). Such a view is anthropocentric. It is also speciesist, as birds are considered in this case to have more (intrinsic) value than other animals.

But humans also have interests, one could say. After all, they are animals too. Yes, but when their interests are met at the expense of other sentient (non-human) beings, such as when killing predators, we can regard this as wrong, just as we would consider vivisection and many experiments on animals conducted for the sake of humans as wrong. However, if we performed similar experiments on humans for the sake of other people, the same behaviour towards animals would not be anthropocentric. Nevertheless, it would still be wrong, as a disregard for the lives of those with inherent worth would exist.

Both the new conservation paradigm (which sees the value of conservation as being for humans) and Michael Soulé's belief that biotic diversity and species have intrinsic value (p. 72) ignore what has been a huge step forwards in the history of Western ethics: the idea that animals have value in and of themselves.

We should also note that, in addition to being anthropocentric, Russell, Innes et al.'s article is also speciesist, as they see only endangered species as having value. Included in the paper is a brief comment about future approaches to dealing with predators needing to be both effective and humane (2015: 522), which might hint that more than instrumental factors are involved. However, this point is not developed.

A strong anthropocentric outlook has shaped our relationship with nonhuman animals in the West. In the East, in Jainism, Buddhism and Hinduism, this outlook is less prevalent. Many indigenous societies are also less anthropocentric than the West. As conservation science and the use of 1080 within it have developed in the West, I am mainly concerned with Western practices. But examining the problem around the use of 1080 from an Eastern perspective or a Māori point of view would be of interest. Nevertheless, ethics in Western philosophy has progressed from a narrow anthropocentric attitude concerned only with humans to a concern with animals and the environment.

Zoocentric or animal ethics

Even though anthropocentrism has played a significant role in Western history, individuals such as St Francis in the 13th century and Thomas Tryon in the 17th century did not hold such a position.

Francis Hutcheson (1694-1745), Presbyterian preacher, theologian; Humphrey Primatt (1734-1776), Anglican priest, animal rights writer; and philosophers Jeremy Bentham (1748-1832) and John Stuart Mill (1806-1873) all contributed significantly to animal welfare issues through their ideas on animal suffering and sentience (Cochrane, 2020: 29). Bentham (1789, Ch. xvii, par.4, note 1) predicted that animals would one day acquire rights based on their ability to suffer. Additionally, there was an

increased interest in animal welfare around the time when the UK SPCA was founded in 1824 and the late 19th century when there was a concern over vivisection.

In the early 20th century, other than a few people like Albert Schweitzer, interest in animal welfare and rights was lower than in the 19th century. Bernard Unti and Andrew Rowan of the Humane Society of the United States attribute this to a rise in industrial agriculture, biomedical research and product testing (2001: 21), all three of which depended on the exploitation of non-human animals. There was, however, renewed interest in animal ethics during the 1960s and 1970s, and this interest has remained.

Two people credited with spearheading the modern animal rights movement are Ruth Harrison and Brigid Antonia Brophy. Harrison, a Quaker and conscientious objector in the Second World War, published *Animal Machines* (1964), a book that exposed the shocking conditions in poultry and livestock farming. Rachel Carson wrote the foreword to the book. This work influenced Peter Singer. The second person, Brophy (feminist, pacifist and animal rights activist), authored 'The Rights of Animals', published in *The Sunday Times* in 1965. Brophy's article mentions the traditional religious system of sacrifice and refers to a still-functioning system of sacrifice, a sacrifice to science, as observed in modern agriculture. However, the classic text on ethics, which gave moral status to non-human animals, is Peter Singer's *Animal Liberation* (1975). Other well-known animal rights authors include the Anglican priest and theologian Andrew Linzey, who published *Animal Rights: A Christian Assessment* in 1976, and Tom Regan, who published *The Moral Basis of Vegetarianism* in 1975 and *The Case for Animal Rights* in 1983. Regan commented in 2001 that more had been written about animal rights in the last 30 years than in the previous three thousand years (Clifton, 2017).

Each of these writers argued against the anthropocentric view that attributes intrinsic value or inherent worth only to humans. Singer developed the utilitarian perspective of Bentham and Mill, which questioned the Cartesian notion that animals do not feel

pain. Regan extended the deontological ethics of rights and duties to include nonhuman beings.

Both Singer and Regan's arguments are based on the idea that those who can experience subjective states of suffering and pleasure in a way that matters to them (that is, they are conscious beings with preferences) have moral standing. This is what sentience is about. See Nathan Nobis' 'Tom Regan on Kind Arguments against Animal Rights and for Human Rights' and 'The Sentience Shift in Animal Research' by Heather Browning and Walter Veit (2022). As we will see, biocentric ethical theories go even further and hold that all living beings have inherent value and should be given moral status.

a) Consequentialism

A consequentialist ethic is one in which the consequences or result of an act, rather than the act itself, determines its moral value. If the outcome is good, the act is also good. In (act) utilitarianism, acts that cause happiness or pleasure are good in themselves and have intrinsic value, rather than just being a means to an end. However, to be seen as intrinsically good, following one's interests has to lead to a good outcome. According to utilitarian ethics, everybody's happiness is equally significant, yet ultimately it is the 'greatest happiness of the greatest number that is the measure of right and wrong' (Bentham, 1789 [2017]: 7). So sentience, being able to suffer or feel pain or happiness, is at the basis of utilitarianism. Because of its emphasis on pleasure and pain reduction, this theory is called 'hedonistic utilitarianism'.

Peter Singer developed utilitarianism to take the satisfaction of preferences or interests as the basis of its ethic, with each individual's interests or preferences given equal consideration. This ethical system is called preference utilitarianism. And the giving of equal consideration of interest by humans applies to all sentient beings (Singer, 2002: 7). To exclude nonhuman animals from consideration would be an example of speciesism, like discrimination based on race, ethnicity or gender, which would be an arbitrary difference that should not affect moral value (Singer, 2002: 9). Most hedonistic utilitarians see intrinsic value in what

actions can bring about—happiness and pleasure. Preference utilitarians hold that the fulfilment of preferences has intrinsic value, though Singer, in an interview, has also said sentient beings have intrinsic value (Russell and Singer, 1997).

In his book *Animal Liberation*, Singer (2002) discusses the evils of factory farming and experimentation on animals. This book and other works provide insight into how he might view 1080. One comment of Singer's, in particular, helps our understanding of the utilitarian position on 1080 poison:

Granting, for the sake of argument, the necessity for pest control – though this has rightly been questioned – the fact remains that no serious attempts have been made to introduce alternative means of control and thereby reduce the incalculable amount of suffering caused by present methods. ... Such [alternative] methods might be more expensive, but can anyone doubt that if a similar amount of human suffering were at stake, the expense would be borne?

(Singer, 2003: 59)

So, it looks as if Singer would not agree with 1080 use. However, within utilitarian ethics, it is still possible to ask whether it would be right to use 1080 if the total suffering of other beings, including humans, would be greater than the suffering of those poisoned if the poison was not used. Here, the future suffering of all sentient beings because of ecosystem damage if we did nothing is considered. If the suffering was greater and all other alternatives had been, we might be justified in using the poison. Of course, a method of killing that does not involve suffering should be used in these circumstances. However, there seems to be one proviso that we would also have to consider if we were going to use 1080 poison. Singer's equal consideration of interest does not mean that all beings must be treated in the same way, but all their interests have to be considered (Singer, 2002: 2, 15-16). Because humans have greater self-awareness and mental ability, their suffering would be more significant in the above scenario than that of nonhuman animals. We would need to take that into account. But also, we would have to think about the situation where a group of humans with the same capacity and self-awareness as the non-humans we are considering were

causing the same amount of suffering as predators (Singer, 2002: 16, 18-21). Would we use 1080 against them? If not, and most people would agree that it should not be used against people, why would we use it against nonhuman animals with the same level of awareness? So, it would seem that the use of 1080 would not be justified.

Other types of consequentialist ethics exist which apply to environmental concerns, such as biocentric and welfare consequentialism. Both operate in the same way as consequentialist ethics, that is, maximising what they see as having value. Welfare consequentialism is similar to Singer's preference utilitarianism, maximising what is good for sentient beings when working with environmental problems. Egocentric utilitarianism is concerned with what is good for the ecosystem. Both suffer from the same criticism that can be made against preference and hedonistic utilitarianism: that individuals can be sacrificed for the good of the majority.

b) Deontological Ethics

Deontological ethics emphasises norms, rights and duties. It has two main ethical maxims: 'Act only according to that maxim whereby you can, at the same time, will that it should become a universal law' (Kant, 1785) and 'Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end, but always at the same time as an end' (1785).

For Tom Regan, all those who are 'subjects- of-a-life' have an inherent value that is separate from the intrinsic value of their experiences (Regan, 1983: 243). This includes both sentient humans and non-human sentient beings. To be 'subjects-of-a-life' means having a life where what happens matters to the individual. Such a being has beliefs, desires, perceptions, memory, a sense of a future, emotions, preferences and welfare interests (1983: 243). Beings who are a subject-of-a-life and have inherent value also have certain basic rights, such as the right to be respected, to be treated justly and not to be treated as a means to an end (1983: 248).

Regarding our conservation concerns, Regan says:

Any environmental ethic that views individual deer as ends-in-themselves and at the same time justifies killing them by reference to a collective good [he mentions here biological diversity and the balance and stability of a regional ecosystem] must be mistaken.

(Regan, 1992: 176).

Regan holds this view because he understands that only individuals can have rights, not species or ecosystems. The reason for killing a particular animal in conservation in New Zealand is that it is killing either vegetation or another animal, such that the killing is leading to the animal or plant becoming extinct. It is not to protect the individual animal. But even if the reason for the behaviour was that these animals were killing other animals who also have a right to life, Regan holds that because prey and predators are not moral agents (moral agents can consciously do right or wrong, moral patients cannot), predators cannot commit a morally wrong act. Therefore, humans have no duty to interfere in such a process, and, overall, we should leave wild animals alone (Regan, 1983: 357). To him, the black rhino has no more rights than a rabbit, even if one is becoming extinct ([1983] 2004: xxix). So, it would seem that in Regan's thinking, we should not kill possums, rats and stoats to save the ecosystem or the wild birds they are killing.

But the issue for Regan is not the sacrifice of an individual or species for another species, but the inherent value of nonhuman animals. Regan holds that we have a responsibility towards the rhino, not because rhinos might become extinct, but because we have contributed to the situation where their existence is at stake. We, therefore, have a duty to assist them, which we would not have for another species that is attacked and is becoming extinct but not through our fault. The same argument applies to conservation in New Zealand. We have contributed to the situation of the birds whose lives are threatened. Therefore, we have a duty to do something about it, but Regan does not go into what would be allowable and what would not be allowable in the above circumstances.

Philosopher Julius Kapembwa (2017) extends Regan's thinking to humans having a right to intervene where an animal is

causing a serious environmental problem, such as species loss, even if humans have not contributed to the situation. The justification for this intervention would not be because of the intrinsic value of the environment or ecosystem but because of its instrumental value in forming a basis for the lives of prey, predators, other creatures and humans (2017: 68).

However, Regan's lifeboat scenario, which applies when there is a conflict of rights, may also apply in the case of New Zealand's predator-prey problem. In this situation, there are four humans and a dog in a lifeboat. They will either all die, or if one jumps out or is thrown overboard, the others will live. Which one should go? Regan says the dog should go because humans would be worse off losing their lives because they have more opportunities to fulfil their preferences if they live (Regan, 1983: 285). Not all deontologists would agree. They would say this is an example of speciesism. Some would say that a lottery system should be used. But we could add, what if they all had equal inherent value, but one was inadvertently sabotaging the situation so they all would die? Should that not lead to that individual leaving the boat if they do not desist?

In the predator/prey conflict in New Zealand, are we all in the same boat? If we do nothing, we will all be adversely affected, but if we eliminate predators, humans and those they prey on will have a much better life. But again, this would not justify using 1080 because of the suffering involved for many beings. And losing biodiversity is maybe not a lifeboat situation but one environmental problem among many, not only caused by animals but also by humans.

c) Ecocentric or Holistic Ethics

During the rise of modern animal ethics, the subject of environmental ethics also developed. Aldo Leopold's *Sand County Almanac* (1949), with its idea of an earth community and a land ethic; Rachel Carson's *Silent Spring* (1962) and Paul Ehrlich's *The Population Bomb* (1968) are all early foundational writings in environmental ethics.

Environmental ethics focuses on determining the values, rights and duties, if any, associated with the environment. The

‘new conservation’ approach is based on the value of the environment to humans. But there is a more traditional view that regards ecosystems and species as having intrinsic value rather than individuals. Such a view is called ecological holism. We observe this view in Leopold’s writings on the land ethic: ‘A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise’ (Leopold, 1966: 262).

Conservation biology emerged in 1978 with the first International Conference on Research in Conservation, with Michael Soulé as one of its leaders. Even though some 1080 advocates shy away from ethical issues, Soulé did not. Indeed, he considered ethical factors as central to the conservation effort. He regarded the subject as a value-laden, value-driven and mission-oriented subject dependent on the social sciences (Soulé, 1985: 727). Soulé outlines ‘normative postulates’ that are impossible to prove but which he sees as necessary for conservation science: diversity of organisms is good, ecological diversity is good and evolution is good. In this view, biodiversity has intrinsic value, regardless of whether it also has a practical value (Soulé, 1985: 730-731). The last postulate has become almost a defining feature of conservation, leading to the view that species and ecosystems have intrinsic value, but individuals do not.

The ecocentric philosophy of John Baird Callicott was an attempt by Callicott to provide a more persuasive case for the value of the biotic community over and above the value of individuals, rather than just give postulates which must be believed. For him, predators and other animals that cause the loss of species can be sacrificed for the sake of the whole, even if they suffer in the process. Indeed, they should be sacrificed despite the suffering. This is because for Callicott, pain and suffering are not dis-values needing consideration. They have nothing to do with good or evil (1980: 332). Callicott says, ‘pain is primarily information’ (1980: 332), which sounds a little like the instrumentalist views of the 19th century French vivisectionist Claude Bernard, who viewed animals as just ‘organic materials made of tissues’ (Anthes, 2017). What, then, would Callicott make of his own suffering? In the article, he suggests that the more

misanthropic an ecological ethic is, the more biocentric it will be. He gives examples such as a person preferring to shoot a man rather than a snake and an injured person needing to escape the wilderness by themselves rather than being rescued (1980: 326).³⁰

Discussion

Some view ecocentric ethics as a positive development from a previous anthropocentric ethic only concerned with human rights or a zoocentric ethic only concerned with sentient beings. Others see the ecocentric approach as a regression from the advances made in the 1970s, which saw the recognition of nonhuman animals as possessing intrinsic value, moral worth and rights.

As noted, before, Singer and Regan hold that an ecosystem or species cannot have intrinsic or inherent value. Singer, for example, says ‘there is nothing that corresponds to what it feels like to be an ecosystem flooded by a dam’ (Singer, 1993: 283). There are no duties to species because they do not have concrete identities and, therefore, do not have interests (Singer, 1979: 203). Regan also argues that only individuals have inherent value, and species or ecosystems possess no value in themselves—their value is instrumental (1992: 180-181).

So, there is no surprise in Regan calling the subordination of an individual’s rights for the rights of a group an example of environmental fascism (Regan, 1983: 359-363). We can understand fascism as a political theory where ‘society is the end, individuals the means, and its whole life consists in using individuals as instruments for its social ends’ (Rocco, 1925). We can find an example of this fascist view in ecologist Eric Pianka, who said, ‘The only hope for the planet was for a mutated Ebola virus to exterminate 90 per cent of the human population’. Pianka later denied saying this and said he was merely predicting what might happen (Richards, 2006). And then there are the extremist views and behaviour of James Jay Lee, who took three people as hostages in the United States in 2010. He said: ‘People are destroying the planet, so destroy the people’ (Roys, 2010). The glaring mistake of these extremists is that they grant fundamental rights to the environment at the expense of individuals and their suffering. We can certainly see their ideas as examples of

ecofascism. However, if we refer to sacrificing people for the sake of the environment as ecofascist, what should we call sacrificing a group of nonhuman animals for the sake of the environment? Surely, such a view cannot be seen as an ethical development.

d) Biocentrism

I believe the environment has more than purely instrumental value. However, it would be difficult to accept that living beings who can suffer, have interests and are subjects-of-a-life can be sacrificed for a concept, such as a species or an ecosystem. But while Singer and Regan's stance challenges ecocentrism, when one considers all the unique life forms in the world, both their views restrict value to only a small number of beings. Biocentrism, though, holds that all living beings—humans, nonhuman sentient animals, nonsentient animals and plants possess equal inherent worth or value and should be given moral status.

We see aspects of biocentric ethics in many religious ideas, particularly in Jainism and Buddhism. Buddhism has a central tenet: that we humans should avoid killing or harming any living thing. A biocentric stance can also be observed in people like St Francis and in many indigenous societies, where it may overlap with an ecocentric ethics.

Albert Schweitzer, with his 'reverence of life' idea, is sometimes called the father of modern biocentrism. A further development of this paradigm can be seen in Paul Taylor's book *Respect for Nature* (1986), where he puts forward a systematic account of biocentric ethics. Foremost in his philosophy, he held four basic principles: 1) humans are members of the earth community; 2) humans are not superior to other members of the community; 3) each being is a teleological centre of life that is pursuing its own good in its own way and 4) such beings are deserving of respect (Taylor, 1986). Taylor had ideas of duties towards such members of the earth community and what should happen when dealing with conflicts.

In examining 1080 use, I will refer to Meera Inglis' biocentric ideas seen in her PhD thesis, *Killing for Conservation: The Ethics of Life and Death in Conservation Policy*. She calls her approach

‘Biospherical Individualism’. The approach takes as central conflicts of interest in conservation, such as whether we should kill animals to save others (2016: 1). She, following Taylor, sees all individual living beings—humans, nonhuman animals and plants—as having inherent value (Taylor uses the term inherent worth), with humans not being special or set apart from other beings (2016: 4-5, 48). Living beings have equal inherent value because they all have a teleology enabling them to pursue their own goals and interests in their own way (Inglis, 2016: 10, 42, 48, 55).

In this biocentric theory, ethical policies in conservation are about protecting the basic interests (what is necessary for a ‘minimum decent life’) of living beings. Inglis stresses that holding such a view differs from just having an effective conservation policy (2016: 2). Certainly, this stance must be given more attention in New Zealand conservation practices.

Biocentrism applied to the question of 1080

The birds being preyed on in New Zealand and the predators are all individuals with their own interests and the same inherent worth as humans. But unfortunately, the interests of animals such as possums involve eating the vegetation that would provide food and habitat for birds, and, according to some, they eat birds, eggs and chicks. Rats and stoats eat birds’ eggs and kill birds, although stoats will also kill rats. These animals cause much environmental destruction, leading some birds to extinction. So, what is the best way to solve this problem?

Inglis (2016: 3, 66) has five principles that can help us when dealing with conflicts of interest in conservation. And indeed, there is a conflict of interest in New Zealand between prey and predators:

a) *Generally, we have a negative duty to avoid causing harm to other living things. This duty is constrained by demandingness.* [A negative duty is when we have a duty not to carry out some action].

b) *Positive duties are generated in two types of situations: the first is in cases of easy rescue. The second is when our actions cause individuals serious harm in the present, or if they are particularly vulnerable to harm in the future because of actions we have taken.* [A ‘positive duty’ is when we have a duty to carry out a particular action].

c) *Different treatment of living things is justified only on the grounds of relevant difference. Therefore, we should treat all living things according to their specific interests.* This means that difference in itself does not justify different treatment. All living beings have inherent value. For example, just because one group of people (or nonhuman animals) is more populous than another, this does not make it any less wrong to kill someone from that group (Inglis, 2016: 98). Although it could justify helping those in the second group if they were becoming smaller in numbers, but not by killing others.

d) *When interests conflict, we should prioritise basic over nonbasic interests.* An example of a basic interest would be an animal's interest in staying alive. A trophy hunter has a non-basic interest in gaining a trophy. So, in the case of a conflict between hunter and hunted, the hunted animal has a basic interest that is valued over the hunter's nonbasic interest. Perhaps in a situation where there were no other jobs that the hunter could do or no other food supply, the hunter's interest might become basic.

e) *In the case of a stalemate, a decision should be made regarding the consequences of an action on the wider biotic community.* (These five principles are taken from Inglis, 2016: 66).

We shall examine these principles in relation to the use of 1080 poison:

a) *The negative duty to avoid causing harm.* As both the endangered species and the predators in New Zealand possess inherent value, we should not harm one group to help another. Predators are not moral agents, but moral subjects. They do not commit any wrong when killing others for food. For Inglis, we do not have a positive duty to prevent the predation of animals in the wild, as this would go against their interest in pursuing their own good in their own way (2016: 81).

b) *Positive duties where we have contributed to the plight of the endangered animal.* It is not a simple task to protect endangered species but given that we helped bring about the situation where they are threatened, we have a duty to help them. Our actions in the past—deforestation, urbanisation, farming and introducing new species to New Zealand have all contributed to the plight of endangered species in New Zealand.

c) *Different treatment is only justified on the grounds of relevant interests.* Both the endangered birds and those who prey on them have the same inherent value and similar interests in living their lives. Therefore, there are no relevant differences to consider. To say we should kill one group to save another would be wrong. That predators cause species loss is not reason enough to kill them, as the environment, ecosystem and species do not possess inherent value.

d) *When interests conflict, we need to look at basic and nonbasic interests.* Both prey and predators have a basic interest in living, as shown in their behaviour. On feral cats on Ascension Island, Inglis holds that their culling was unethical. To her, cats' interests in hunting are nonbasic. They can live without hunting and eating meat, so they could be rehoused elsewhere and neutered (2016: 142-145). But could we say this of possums regarding vegetation and rats and stoats regarding birds? Would it be possible to rehouse them in sanctuaries? I doubt it. So, a conflict of basic interests exists between two groups of animals. And unlike Peter Singer, where suffering is the main issue in ethics, in the biocentric approach, we also must consider the right to life that all living beings have. So, given this conflict of interests, we need to go to the fifth principle.

e) *When a stalemate exists, we should go to the consequences of an action on the wider biotic community.* And the result of doing nothing about predators and prey in New Zealand is that many birds will become extinct, causing biodiversity loss, thus harming the lives of all living beings. Also, as seen, we have a responsibility towards these birds, as we helped bring about their situation. But to decide what to do about the problem, we need to know more about the situation. Are these animals the principal contributors to biodiversity loss? Inglis speaks about the hypocrisy of concentrating on introduced species and wanting to kill them while ignoring the problems caused by humans—deforestation, loss of habitat, farming, urbanisation, etc. (2016: 105). Has the fact that ecosystems and populations change over time also been considered? Do these factors lessen the importance of controlling predators? I believe they do.

But if the problem of predator loss will be a significant problem for all living beings, and if we helped bring about the

situation that contributed to the problem of predator loss, then we are responsible for doing something about it. We need, though, to correct the problem by causing the minimum disruption and pain to the lives of animals. We might start with reforestation and habitat restoration (2016: 73). At the extreme, we might need to remove predators entirely, doing this by neutering, immunocontraception or genetic modification (2016: 109).

However, given the difficulty of predator control in New Zealand and the threat to all beings, I would question whether the above actions would be sufficient or fast enough. If so, could the principles of last resort and self-defence justify killing predators, as Inglis (2016: 155-158) justifies killing viruses? Obviously, viruses are not sentient and do not suffer from being killed in the same way as sentient beings. But could not the same principle of self-defence against aggressors apply to rats, possums and stoats' destructiveness to all other living beings?

To me, the situation of humans and the effect of predators on all of life can be likened to a gardening scenario where growing food is the only form of livelihood for one group of people, and their lives depended on it. Also, there is no state apparatus to protect them. Such a situation would justify us defending the garden against people trying to take the garden's produce from us. Of course, if possible, we first need to try reasoning with the people, even employing their help. Still, if that did not work and they continued with their attacks, maybe lacking full consciousness of what they were doing because they were drunk or on LSD, we would need to find another solution. We might try fencing the garden and putting up notices. But if that also did not work and we knew our garden would not be productive enough to keep us alive and the same situation continued, we would be justified in guarding it more strongly, even resorting to arms.

Surely, the situation with some of our predators can be seen as like the garden scenario, so justifying a response. Of course, we would first have to apply methods such as habitat restoration, neutering, the use of immunocontraception and even genetic modification. But if this were not enough, we would have a duty to do something more. This might involve using traps that work

quickly and even using quick-acting poison as a last resort. But this would only be justified until we got the situation under control. It would not, though, involve poisons like 1080, which cause suffering, nor should it involve a policy of a completely predator-free New Zealand, which demands participation in a constant killing activity. Both suffering and the right to life would need to be taken into consideration. Just because a method of killing does not involve suffering, this does not justify the action of killing. However, such a response, as outlined, would only apply in extreme situations. There would always be a requirement to keep ethical views in mind.

Conclusion

For me, the biocentric approach offers much more than an ecocentric or zoocentric ethic can offer. A biocentric approach can incorporate the value of humans, non-human animals and all of life. But missing is the value of non-living natural entities, like rivers or mountains. To see these entities as only having instrumental value would not be doing them justice. Perhaps an ethic deriving from the religious idea of the (intrinsic) good of all creation or a neo-animist ethic inspired by indigenous philosophies would help here. But developing such an approach deserves another book. The present work has the value of living beings as its focal point. And that can best be justified by zoocentric and biocentric ethics. Any other ethics or value system would need to have the idea of the intrinsic value of all living beings as one of its foundations.

Another element often forgotten within abstract ethical arguments and actions regarding animals is the place of compassion. Compassion will be the subject of our next chapter.

Compassion and the Call of the Other

If you have people who will exclude any of God's creatures from the shelter of compassion and pity, you will have people who will deal likewise with their fellow humans.

St Francis of Assisi

Boundless compassion for all living creatures is the firmest and surest guarantee of pure moral conduct.

Arthur Schopenhauer

Spreading poison, which is to say spreading suffering and death, all over the land is more than a failure to understand caring for country. It is a heart-breaking leap from mimicry to mockery, by way of managerial suffering ... to inhabit the land through ... slaughter.

Deborah Bird Rose (2014: 7.45)

Our task must be to free ourselves ... by widening our circle of compassion to embrace all living creatures and the whole of nature and its beauty.

Albert Einstein

To understand the subject of compassion, I encourage readers to consider the following account of a bear shot by hunters. Other examples of non-human animal deaths are also presented. These accounts can help us understand what this killing means for the animals involved, which is often omitted in reports of the killing of nonhuman animals, whether in slaughterhouses, factory farms, science laboratories or conservationists' poisoned fields.

A meditation on the death of non-human animals

A jolt of paralysing pain tears through the bear's body. The animal staggers—its heart pounding, almost touching the bullet that lodged itself deep into the throbbing lungs. In an instant, blood floods the organs but somehow, surprisingly, it doesn't spill out onto the ground, as if in a lonely act of mercy, it refused to aid the pursuers with a traceable path. No use, though. No use. Racked with an anguishing pain—confused and disoriented—the bear bumps into trees, sways from side to side, his oozing, gaping wound scraping against the bark. This is it; this is it. The agony sets in; it ensnares the weakening limbs. From the parted jaw, blood comes pouring out between the wispy gasps of air. The world loses its familiarity; it gets dimmer, narrower. All of a sudden, at the edge of the earth, the wobbly body stumbles and rolls down the rocky slope. ...The descent is slow at first, almost gentle, but then it gets faster and faster as the wind rustles furiously and the sky above keeps blinking into the panicky eyes. This is it. This is it.

[The hunters on vacation in Alaska describe what happened]:

It was a great hunt with a great guide that ended with four nice bears being harvested.

(Gosia Bryja, 2016)

The hunters' testimony conveys no understanding or feeling of the bears' experience. Instead, we notice an emotional and spiritual bankruptcy. In contrast, the narrative of the bear's experience opens us to an encounter with a non-human other, and his or her pain in the last days of life.

The reflection I encourage readers to do is a meditative activity that enables one to immerse oneself in the above scene. Following Martin Heidegger's understanding of the word 'thinking' as a type of thanking, we can identify our reflection as a thankfulness for the bear's life and mourning for his or her death. So, we can bear witness to the bear's life by meditating on what happened in his or her last minutes. If we take it to heart, we can mourn, here mourning for the death of the disregarded (disregarded at least by the hunters).³¹ Dwelling, witnessing, and

mourning engage us in what Van Dooren, Kirksey et al. (2016) call ‘the cultivation of the arts of attention’, which runs counter to the instrumental, calculative thinking of hunters who miss the essence of the bear. They do not shed a tear. The same instrumental, calculative reasoning is found in modern scientific methods of dealing with those given the label of ‘predator’. These methods also fall short of the being of the rats, possums and stoats. Those poisoning animals do not shed a tear, either. And why not shed a tear? Does not that make us more human and more animal?

Rarely do the animals we are concerned with have reports of their deaths that do justice to their experience of dying when poisoned as movingly as the above account of the bear dying when shot. Nevertheless, the following statement, reported by Mandy Carter from SAFE of what a possum goes through when poisoned by 1080, opens us up to the experience of the possum. It conveys sympathy and the starkness of a living being experiencing the death throes after being poisoned:

From about four hours after poisoning until death, all lethally dosed possums exhibited spasms involving the limbs or body. Possums vocalized during spasms, tremors or seizures. Vocalization was loud and prolonged. (Squeaking, gasping and gagging noises were also frequently heard during retching and terminal breathing). Seizures included stiffening of limbs with hunching of the shoulders; jerks in limbs, head, abdomen or shoulder; leg paddling; rolling onto the back with a stiffened body; continuous body rolling; trembling, and rigidity of the entire body. Possums were sometimes propelled into the air by these movements.

(Carter, 2016)

We now turn to Hugo von Hofmannsthal for another account of an animal dying from poison (1902). In ‘The Lord Chandos Letter’, Von Hofmannsthal conveys in prose an extraordinary rendition by the person, Lord Chandos, supposedly writing the letter, of what the experience might be like for rats dying from poisoning. Despite being prose, the writing conveys the ordeal better than most scientific descriptions could:

Recently, for instance, I had given the order for a copious supply of rat-poison to be scattered in the milk cellars of one of my dairy-farms. Towards evening I had gone off for a ride and, as you can imagine, thought no more about it. As I was trotting along over the freshly-ploughed land, nothing more alarming in sight than a scared covey of quail and, in the distance, the great sun sinking over the undulating fields, there suddenly loomed up before me the vision of that cellar, resounding with the death-struggle of a mob of rats. I felt everything within me: the cool, musty air of the cellar filled with the sweet and pungent reek of poison, and the yelling of the death cries breaking against the mouldering walls; the vain convulsions of those convoluted bodies as they tear about in confusion and despair; their frenzied search for escape, and the grimace of icy rage when a couple collide with one another at a blocked-up crevice ... but there was more, something more divine, more bestial; and it was the Present, the fullest, most exalted Present. There was a mother, surrounded by her young in their agony of death; but her gaze was cast neither toward the dying nor upon the merciless walls of stone, but into the void, or through the void into Infinity, accompanying this gaze with a gnashing of teeth! - A slave struck with helpless terror standing near the petrifying Niobe must have experienced what I experienced when, within me, the soul of this animal bared its teeth to its monstrous fate.

Again, this narrative contrasts markedly with the hunters' comments after killing the bears. It has the hallmarks of empathy and compassion, of 'becoming animal' in the term of philosophers Gilles Deleuze and Felix Guattari (1987). The hunters' account of their day's activities, on the other hand, is marked by rigidity and closed-in-ness, a kind of narcissism that recognises the other only in an instrumental way.

Deleuze and Guattari (1986, 1987) take up the theme of Hofmannsthal's essay to reflect on both what it means to be human and what it means to be animal. They understand 'becoming-animal' to be a 'deterritorialization' that calls into question a lasting and robust sense of identity as a human being, and thus creates an opening for other ways of being (1986: 14-15). For instance, we recognise the hunters as being so entrapped

in a rigid identification as hunters and as masters of nature that they perceive the bear not as a bear but only as 'prey'. They cruelly kill the bears to maintain the notion of humans' invincibility and dominance. They do this by using advanced technology that keeps the bear at a distance as an animal 'other' by muffling the bear's death cry with the sound of the gun.

Is there not an analogous activity happening in the killing fields of New Zealand where conservationists use helicopters to spread 1080? The screams and convulsions of possums, stoats and rats are not seen, heard or heeded. In both cases, the shooting and the poisoning, a technological solution that keeps the practitioner's identity intact is used. We also observe this detachment in laboratory scientists when they record the timing, movements and intensity of the sound waves of a dying animal but miss the scream, the fear and the pain. Perhaps we can recall here Albert Schweitzer's injunction to 'Think occasionally of the suffering of which you spare yourself the sight'. We can add 'the sound'.

In contrast to the hunters and the scientists, Lord Chandos finds himself outside the closed-in prison of technological imperialism, so he can enter the rats' world. He can let go of a defensive over-identification with being human. Perhaps that is why Lord Chandos wrote the letter (which goes almost beyond rational discourse and leads to an unspeakable encounter with transcendence in the ordinary world) to Francis Bacon. Bacon was the early 17th century advocate of empirical science and a technological, mechanistic domination of nature for humans' benefit, still with us today.

Another moving account is nature writer Ka-Shiang Liu's work on stray dogs in Taiwan. Tsung-Huei Huang (2009), a literature professor, speaks of Ka-Shiang Liu's work, 'Hill of Stray Dogs' as giving a voice to the dogs' perspective and rescuing animals and humans from the binary opposition of 'animal-human'. Liu recounts a moving story of a mother dog picking up her dead (run-over) puppy and dropping him at the unopened grocery store whose owner used to offer the dog food. A person passes by, stops and puts the body in the rubbish bin, leaving the dog in despair, circling the bin in vain (Huang, 2009). This

account has similarities to what one person encountered in a forest in New Zealand—a possum who died through 1080 poisoning but who had live baby possums in her pouch. Of course, this scene would not have been shown to us by DoC.

So, we observe how the puppy and possums are treated like trash by people, but the mother dog and baby possums have a greater sense of being than the people who caused their distress. The dog showed it by circling the bin containing the body of her puppy. The baby possums showed it through their faith in life, expressed in their initial will-to-live when found. But unable to take nourishment from their dead mother, the baby possums soon died.

Reflections on the above

We observe in the above accounts examples of ethical reflection. Here, the ethics of right and wrong are not discovered through abstract reasoning, through what philosopher Acampora calls ‘concept chess’ (Howard, 2009), but in encounters with an other. For the philosopher Levinas, ethics is an encounter with an other, a call from the other waiting for a response (taking up a position of responsibility) (Levinas, 1985). The encounter with the other enables empathy and compassion to appear in responding to the call for involvement.

The terms ‘good’ and ‘evil’ are not used in the above stories. Still, it is easy to discern a sense of good and evil in the stories. The hunters lose our respect, while the mother dog, the rats, the baby possum and their mother gain our respect and sympathy, as does Lord Chandos, who almost drives himself mad in facing up to the significance of what he has done. Of course, we see the writers of the above scenarios also enabling us to perceive the ethical nature of what is going on.

This opening up to the other can be understood as entering into the other’s life with care, concern, thoughtfulness and compassion. Such a process makes it possible for ethical values to appear through feeling one’s way into the life of the other. However, these feelings are more than just physical sensations or emotions; they are also cognitive assessments that lead to encountering the value of the other. For philosopher Lori Brown

(2007), such an endeavour offers a way to experience nature differently by engaging ethically with nonhuman animals as partners in a shared world, rather than as objects of our gaze or dominion. We can then recognise that we are only one form of becoming amongst many other forms (2007: 267).

Some people understand the views of those like the above that put feelings, emotions and experience at the centre of ethics and the way we gain knowledge about the world as a type of emotionalism, subjectivism or sentimentalism. They see this stance as missing the ethical, as if uninvolvement and objectivity more easily lead to what is right or wrong. Critics of compassionate conservation often hold this view.

But for those that respect the virtue of compassion, emotions do not force us to construct values willy-nilly; they are what help us encounter values, while abstract reasoning or empirical science can often miss them. For example, the existentialist philosopher Robert Solomon believes that emotions are rational and a type of evaluative judgement with 'a logic of their own' (1976: xx, 149, 241-258). Not that we do not have to at times re-evaluate what emotion seems to reveal to us, but this is also what we must do in rational or scientific endeavours. The philosopher De Sousa also takes a similar position. He sees emotions as a type of perception necessary for rationality to function and to apprehend the 'rich meaning' of our lives as well as the 'tragic dimensions' (1987: 332-333). I would add the rich meaning of the lives of other living beings and the tragedy they experience, one example being the dying from poison administered by human animals to non-human animals.

Compassion

According to Albert Schweitzer (2009):

The man who has become a thinking being feels a compulsion to give to every will-to-live the same reverence to life that he gives to his own. He experiences this other life in his own life. He accepts that it is good to preserve life, to promote life, to raise any life that can develop to its highest value. And he accepts that it is evil to destroy life, to injure life, to repress

life which is capable of development. This is the absolute, fundamental principle of morality.

Schweitzer applied the above ethical stance to all living beings. His comment shows that compassion for him is not just an abstract theory, not simply a feeling, not something discovered in a formula, but a disposition that a person can cultivate. We must all take responsibility for cultivating compassion, as the opposite—indifference, unfeeling and mercilessness—can all take over. Predating those writing on the theme of ‘becoming-animal’, Schweitzer (1923) says, ‘I am life that wills to live in the midst of life that wills to live’. And although he knew we cannot obtain perfection, he maintained we should strive for a reverence for life. His ethics could be considered a bioethics, one that values all life.

A teenage girl who embodies the above ethic is mentioned in the Horowhenua Chronicle (Collis, 2013). Her life project is to help injured birds, especially non-native birds who have trouble getting medical treatment. In this teenage girl, we observe compassion, characterised by care, concern, passion, a love for birds and a willingness to share her world and resources with them. This person is described as having the desire to become a veterinary nurse. However, we already observed her practising the art of nursing. Her attitudes and actions toward non-humans are in stark contrast to another person I met who, when hearing the cockerel in his backyard making a noise in the early morning, got up and shot the bird. The bird did nothing more than try to participate in the dawn chorus in his or her own way. Still another person I came across was helping his dog swim in the river with a long lead attached to the collar. The lead gave the dog confidence, as the dog was both blind and deaf. The man had first seen the dog in a local animal rescue shelter and decided to give him a home. In these examples, I do not imagine the teenage girl or the man with the dog have studied philosophical or scientific texts on compassion. Nevertheless, their being or nature was to respond to what they found in the world—an invitation from the other. They embodied compassion.

Compassion has been understood as an emotion, feeling (affect), attitude, cognition, volition, virtue and disposition. It’s most likely all of these. There is an overlap of ‘compassion’ with

the concepts of ‘empathy’ and ‘sympathy’. These concepts are sometimes defined in different ways, depending on the writer. Simply put, empathy is feeling what another is feeling, sympathy is understanding what the other is feeling, and compassion is a willingness to relieve the suffering of another (Schairer, 2019).

Compassion, according to psychologist Peter Rosan, enables us to answer the call of the other and attend to a person’s suffering (2014: 178). He sees empathy, sympathy and compassion as ‘ways of being’ and a sensibility to the other that is ‘fundamentally ethical in character’ (2014: 156-157). Possessing these attributes presupposes being embodied, making us members of an ethical community, the members of which can experience joy and pain that calls for a response. Rosan in this article is talking about humans, but we can extend this account of the object of compassion to include nonhuman forms of life—a response to the suffering other, no matter who they are.

All beings who live a life can be said to share a world and a corporal way of being, no matter how different they are from one another. We are all born, live and die. And while humans have attempted to separate themselves from animals, as seen in their creation of the animal/human and nature/culture dichotomies, these dichotomies are increasingly being questioned. Philosopher Ralph Acampora, for instance, rather than suggesting that we extend our ethical relationship to non-human animals, questions why we left or disavowed a more primordial connection to animals (through a common embodiment and kinship) in the first place. He suggests that opening up to this disavowed connection will allow an ethics to develop (2006: 6, 14). Acampora sees compassion more than rationality as enabling this process (2006: 23). This notion is similar to Rousseau’s belief that compassion is a humbling of ourselves as humans, a dis-identifying from a clear human /animal dichotomy. It also resonates with Inston’s idea of compassion beginning ‘from a disruptive encounter with another’s suffering that generates anxiety ... unsettling our sense of security’ (Inston, 2019: 3), as we saw in Von Hofmannsthal’s reaction to his poisoning of the rats. So, being grounded in this ethical community made up of all living beings attunes us to the suffering of the other and calls for a response. Schweitzer calls

this ethical community ‘a fellowship of those who bear the mark of pain’ (1923).

Rose (2013), in her work ‘In the shadow of all this death’, uses the poet Seamus Heaney’s term ‘the house of life’ to refer to the community of all earth creatures ‘who are born to die’ (2013: 2, 4, 5). In the poem, we have a dog ‘crying out all night behind the corpse house’ because he or she could not avert the finality of death. Rose says we are all dogs crying or howling in the night because of our responsibilities and inadequacies in the face of our death and that of others (2013: 2). She refers to a ‘death zone’, where the living and dying meet, and mentions an Indigenous Australian poem where a dingo is tricked into dying before his time. She speaks of two possibilities in the story: to push the other towards death or ‘to counter loss with ‘mateship’—to refuse to abandon the other, to howl in solidarity, as the other dingoes do. To choose ‘mateship’ is a call to ‘an ethics of proximity, responsibility and witness’ (2013: 3-4). It is a call to ‘learn anew to be horrified, to weep’. (2013: 5). Later in her paper, Rose turns her attention to those given the ‘slippery label pest’ which she sees as a condemnation to death cloaked in ‘managerialist doublespeak’ (2013: 15). Here, she is referring to dingoes and flying foxes in Australia, which are shot, poisoned, gassed and electrocuted (2013:16).

It is perhaps more difficult in New Zealand, because of our conditioning by society and conservation organisations to have the same compassion for rats, stoats and possums as it might be to show it to the dingo in Australia or the bear in Canada. That is why it is necessary to have the writings of people like Von Hofmannsthal, Rose, Bryja, Bekoff, and others.³² They promote the ‘crazy type of love’ that Rose describes, which invites us to join in the howls and cries of those shot, poisoned and trapped; sometimes referred to as a ‘killing with kindness’, which is another type of craziness. To some extent, the anti-1080 movement takes on this crazy love to counter the craziness of the establishment.

1080 Poison Causes Suffering

Most ‘scientific’ accounts of the effects of 1080 contain a list of the behaviours of poisoned animals observed by a detached observer. Thus, Kate Littin’s (2004) PhD on possums poisoned by either 1080 or brodifacoum includes various experiments. She describes the thesis as ‘an example of the application of animal welfare science to an issue of potential concern for animal welfare’ (2004: 4). I would add here that it is an issue of actual concern rather than potential. She tells us about predators in New Zealand, the attempts to control them, and the poisons used. Mention is made of the impact of poisoning animals on humans, including the fact that a pest control method can cause a death that seems distasteful (2004:8). Of course, the death may actually be distasteful, especially for those animals poisoned. Littin speaks of her work, assessing and measuring the capacity to suffer, the duration of suffering, the intensity of suffering, the number of affected animals, etc. The central part of the work describes the various experiments conducted. In one experiment, the experimenters gave eight possums a lethal dose of 1080 and another group a sublethal amount (2004:62). The experimenters observed the possums regularly until their deaths. They made observations of the quantity of poison consumed, body weight before and after death or recovery, and time to death. One observation was that after about three hours, seven possums, lethally dosed, started retching (the number of times and when were recorded) (2014: 62). Another observation was observing them roll from one side to another. The experimenters compared various experimental groups using Kruskal-Wallis tests, followed by Dunn’s Multiple Comparison post-hoc tests (2004: 61). Among the findings of one experiment—‘the limit of detection was 0.003 mg/g (0.0003%), and the 95% confidence interval (CI) was...’. Conclusions of the study: a new method for such studies had been developed (2004:61); all poisons impact animal welfare; advantages and disadvantages existed in using the toxins in terms of their effects on the environment and humans and these points should be considered when using the poisons (2004: 196).

Now I would not have the ability to criticise any figures from the experiments. But, for me, the presentation disguises the life and painful death of the possums subjected to the experiment

under the figures and formulas provided by the experimenter.^{33 34} Perhaps scientists will like the work, but I prefer the rich, moving, compassionate accounts of the experience of the bear and rats given by Gosia Bryja and Von Hofmannsthal.³⁵

Such work on conservation, ‘pests’ and 1080 as Littin’s should be read alongside works such as Annie Potts’ (2009) ‘Kiwis against Possums: A Critical Analysis of Anti Possum Rhetoric in New Zealand’ and Vincianne Despret’s (2009) ‘Thinking like a rat’. In Potts’s work, we would get more of the context of killing possums and what motivates the killing. Despret’s work contains a critique of positivist experimental procedures on rats where the subjectivity of the rat and their views are not valued. Such readings would give a broader idea of what we are doing in poisoning animals and how the so-called ‘scientific’ approach is only one approach, informed by assumptions—one being the necessity of leaving compassion outside the door. But there are other approaches: compassionate conservation, deep ecology, biosemiotics, cognitive ethology, environmental humanities and eco-phenomenology that understand compassion as a necessary way into an animal’s subjectivity.

The idea, on one pro-1080 website I came across, that 1080 causes little suffering since the animal is unconscious and any movements the animal makes are more like epileptic seizures than indicators of pain surprised me. Such a view reminds me of Descartes and the vivisectionist Claude Bernard. Descartes believed that an animal is only an inert object, and the sounds made by animals subjected to experiments are only noises. Bernard believed likewise. Contrary to this view, veterinarian Miranda Sherley (2007) argues in her paper ‘Is sodium fluoroacetate (1080) a humane poison?’ that insufficient work has been carried out on the welfare concerns of poisoning animals. Such a lack of consideration for the suffering of poisoned animals is outrageous. One would expect concerns about animal welfare to be considered before using poison, not after. However, such a shortcoming shows the mentality of those using poison and a society that does not pay sufficient attention to the welfare concerns of non-human animals. Regarding those who have

written about the suffering caused by 1080, Sherley points to their concentration on the last phase of poisoning, where assessing suffering is more difficult than in the previous stage. She says, 'It is purely speculative to suggest that the signs of 1080 toxicosis rule out the possibility of pain' in this later stage (2007: 451) and that 'central nervous system disruption cannot be assumed to produce a constant pain-free state' (2007: 451, 449). In the last phase, an animal can often move in and out of consciousness, with death occurring during lucid moments or convulsions (2007: 454, 456). Sherley notes that poisoned animals suffer from lethargy, retching, vomiting, trembling, faecal and urinary incontinence, unusual vocalisations, hyperactivity, excessive salivation, muscular weakness, incoordination, hypersensitivity to nervous stimuli and respiratory distress, as well as seizures and convulsions (2007: 454). In her paper, Sherley proposes the need for the extension of observations from only being on the last stage to also including the first stage and to extend observations to aspects such as the experience and behaviour of affected animals, the experience of human victims, and the long-term effects on surviving animals, including the risk of injury in spasms (2007: 452-455). She concludes, 'sodium fluoroacetate (1080) should not be considered a humane poison' (2007: 449, 456).³⁶

In contrast to Sherley's conclusion, scientists Twigg and Parker's (2010) work reintroduces the notion that using 1080 is humane. They argue that the poisoned animal does not seem conscious and therefore does not suffer. But they add no more to the subject than Sherley has already considered, apart from narrowing the suffering period to a mid-period after an initial lag period and before a final terminal phase in which the animal is 'virtually' unconscious and 'unlikely to experience undue pain levels' (Twigg and Parker, 2010: 255). Their conclusions seem to be based not on the suffering caused by the poison to the animal but on practical concerns: no alternatives to 1080 exist, and the well-being of other species should be considered, as should the public's views. These are hardly aspects to consider when looking at the presence of suffering in those being poisoned.

Like Sherley's conclusions, Landcare considered that 1080 used on possums is intermediate in its effects compared to

cyanide and brodifacoum. On a scale of 1-10, cyanide scored 4, 1080 6, and brodifacoum 8 (2010: 8). These results are like those in experiments on poisoned rodents. In their report, Landcare changes its wording from 'humaneness' to 'animal welfare impacts', as it holds the view that 'truly humane control methods are rare' (MAF, 2010: 4). Landcare carried out a thorough review of previous work, including the articles mentioned earlier. In a more recent report by research scientists Maurice Rewi Alley and Ngaio Beausoleil (2016), there is a graph of the relative impact of VTAs (vertebrate toxic agents) where 1080 is placed under the severe category, cyanide is placed as moderate and brodifacoum is placed under the extreme label (2016: 31).³⁷

Many poisons take some time to come into effect. With 1080, it can take a rat from 2 to 36 hours to die and a possum 5-97 hours (Sherley, 2007: 453). If we compare these figures with drowning, it takes a rat an average of 2.6 minutes to die (Coghlan, 2009). However, drowning an animal is cruel and it is illegal in New Zealand. But the question remains: should we use even relatively humane poisons to the extent that we use 1080 now? And we have seen 1080 is placed in the severe category. Other questions we could ask are, would it be fitting to leave an animal convulsing for hours in the forest after being poisoned? Should we then use the poison to euthanize non-human animals or even human animals, given some people have proclaimed that those poisoned would be unconscious and so unaware of pain? But Professor of Veterinary Medicine John Ludders, Robert Schmidt et al. (1999: 669) say of attempting to euthanise an animal by drowning: 'any technique that requires minutes rather than seconds to produce death cannot be considered euthanasia'. The authors of this paper deal with minutes of suffering. But what if an animal is poisoned with 1080, where there may be hours or days before death? Surely that would be worse than drowning. So, if drowning is prohibited, as it should be, should not poisoning also be prohibited? In any case, we can say that people can do better than drowning or poisoning an animal. We should strive to do better by omitting the 1080 technofix based on animals as machines, humans as masters of nature and nature as a slave.

Anti-vivisection movement as similar to the anti-1080 movement

In Britain, a growing interest in vivisection developed in the late 19th century. Interesting for us are the similarities between the anti-vivisection movement in Britain and the anti-1080 movement in New Zealand.

One founder of the anti-vivisection society was Frances Power Cobbe, a daughter of an Irish family (descended from the Primate of Ireland) and a staunch suffragette who also campaigned for animal rights. In 1875, with the help of Lord Shaftesbury, George Hoggan (medical doctor) and Cardinal Manning, she founded the first anti-vivisection society in England. Soon after the organisation's founding, the 'Cruelty to Animal Act' of 1876 came into being. As a result, vivisection was restricted, but some experiments could still be conducted without anaesthesia.

Vivisection still took place in the early 20th century, but with strong resistance. Particularly noteworthy is the 'Brown Dog Affair'. A procedure to inhibit the functioning of the pancreas was performed on the dog to verify that the first operation was successful. After being caged for four months, the scientists carried out another operation on him to assess the results. The dog was then passed on to the renowned physiologist William Bayliss (February 1903), who operated on the dog's neck and attached electrodes to stimulate nerves. He was muzzled (the dog, unfortunately), head clamped, legs tied to an operating bed and led into the lecture room at University College London, where the first wound was opened again (Mason, 1997: 41).

Two Swedish feminists and anti-vivisectionists, Lizzy Lindaf-Hageby and Leisa Schartau, infiltrated the lecture hall where the operation on the dog took place. Later, they reported that the (brown) dog used in the experiments had moved during the procedure because of insufficient anaesthesia. They informed Stephen Coleridge (related to Samuel Taylor Coleridge), the secretary of the anti-vivisection society, who spoke about the issue at a meeting of the society in which about three thousand people were present. He called the process torture. Noted novelists Jerome K. Jerome, Thomas Hardy and Rudyard

Kipling all sent their support. Lind-af-Hageby and Schartau (1903) also published their diary, *Shambles of Science*, with a chapter called 'Fun' after seeing the students' laughter at the procedure. Some claimed the dog was killed with a knife in the lecture hall (Rivero, 2019). Opponents of vivisection erected a memorial to the dog in Battersea Park in 1906.³⁸ George Bernard Shaw and the well-known feminist Charlotte Despard spoke at the unveiling. Should we similarly raise a monument to all animals killed by 1080?

After the monument was put in place, further conflicts ensued, including the Brown Dog Riots of 1907. During a protest, more than a thousand medical students clashed with the police. Various people participated in these anti-vivisection protests—working-class Battersea people, trade unionists, socialists, Marxists, liberals, suffragettes and 'all kinds of mavericks' (Mason, 1997).

In the anti-vivisection protests, we can observe resistance to a paradigm in the medical system that makes it all right to kill animals. The vivisectionist argument was based on an anthropocentric ethic that viewed animals as existing for humans. The comment by John Simon in 1881 at an international medical conference in London sums up this instrumental/utilitarian viewpoint: 'We have to think of usefulness to man' (Bates, 2017: 6). Also, we note in the practice a view of science as objective and dispassionate (2017: 6) as we see in New Zealand with 1080 poisoning. Therefore, the practice of poisoning animals needs the input of compassion to help understand the animal as a living being and not just a machine, just as the anti-vivisection movement brought compassion to the issue of experimentation on animals.

Here in New Zealand, the NZAVS (anti-vivisection society) states that in 2020 approximately 245,522 animals were involved in research, testing or teaching purposes in New Zealand. Of these, 111,161 died (NZAVS). If this figure were added to the number of animals dying through poisoning, it would make for countless killings performed by the so-called superior animal, human beings. So, perhaps Reihana Robinson (2017) is correct, then, when she refers to New Zealand as the 'killing nation' in the

title of her book.

Also, vivisection advocates argued that vivisection is science and that only scientists should comment on it. Many 1080 supporters use this argument in regard to 1080, even if they are not scientists themselves.

In both the anti-vivisectionists and the anti-1080 movement, ethical concerns based on rights and compassion are brought up by those who disagree with vivisection and poisoning. But establishment figures dismiss these concerns as unscientific. In both movements, people involved in the protests come from diverse backgrounds. While the pro-1080 movement often wants to write off anti-1080 people as extremists, science deniers and anti-authority, they come from diverse backgrounds, like the anti-vivisectionists.

In Europe, the medical establishment's vivisectionists also occasionally used curare, a poison that became more popular in Britain in the late 19th century. Instead of anaesthetising the animal, the curare only immobilised them. The animal then appeared not to be experiencing any pain, but that was incorrect. The animal was prevented from expressing the pain, not from feeling it (Murrie, 2013). Other vivisectionists would cut the animals' vocal cords to avoid being distracted by the animal's cries. Claude Bernard (1813-1878), an eminent vivisectionist and physiologist, said of vivisection: 'For the physiologist, it's not the animal, that lives and dies, these are organic materials made of tissues' (Anthes, 2017) and, 'A physiologist ... no longer hears the cry of animals, he no longer sees the blood that flows, he sees only his idea and perceives only organisms concealing problems which he intends to solve' (Bernard 1927: 103). No wonder in her book, *Experiential Animals* 2016, Thalia Field perceives a resemblance between Bernard and the character Frankenstein in Mary Shelly's novel, *Frankenstein or The Modern Prometheus*. In the novel, Frankenstein speaks of animal body parts as tissue (Anthes, 2017). The name Prometheus refers to someone who 'exceeds their remit'. We mainly use the term in modern culture, where there is a negative overestimation of a person's competence in the scientific field. We could well say that DoC in New Zealand has exceeded its remit by showing a wanton disregard for an

unwanted and unliked group of animals. They have ignored the lives and sufferings of those they are killing.

Compassionate Conservation

Since the rise of animal rights philosophy and various conservation specialities, another speciality has developed—compassionate conservation. Those involved in this new discipline have brought the knowledge of animal cognition and sentience, derived from animal ethics and compassion to conservation concerns, where there was once only a primary concern with ecosystems and species. As stated in the introduction, four principles related to compassion are part of this group's charter: first, do no harm; second, individuals matter; third, inclusivity and fourth, peaceful coexistence. These were added to the concern with ecosystems.

Compassionate conservation is described on the Centre for Compassionate Conservation website at the University of Technology Sydney (UTS) as interdisciplinary and as promoting 'the treatment of all wildlife with respect, justice and compassion' under the four principles already mentioned. Finding solutions to conservation problems that minimise harm to any subject of life is advocated. The statement ends with a commitment to the well-being of humans, animals and nature (UTS, 2020).

Various criticisms of compassionate conservation have been made that it is not scientific, it is anthropomorphic and emotionalist, it is based on a virtue ethic mainly concerned with human dispositions, but which will not necessarily lead to less harm to animals. We can see these criticisms in the work of Griffin, Callen et al. (2020), Johnson, Adams et al. (2019), Hayward, Allen, et al. (2019) and Beausoleil (2020).

However, these criticisms are based on unexamined assumptions. The view of emotion they assume is only one view, and they ignore other ideas that see emotions as cognitions and ways of accessing the world of the other, as already mentioned. Besides, one could easily turn around the critique of compassionate conservation as being emotionalist to say that what is wrong with traditional conservation is precisely a lack of emotion and compassion, at times to the point of pathology.

While critics often criticise compassionate conservation as unscientific, this may be because of the narrowness of their idea of science. Unknowingly, many critics assume a narrow positivist, mechanistic account of science. This, combined with a simplistic consequentialist ethic (also not often recognised), can allow various cruelties and injustices to be carried out under the banner of science. Also, in this criticism of compassionate conservation, critics see compassion as the only principle of the movement. However, the movement has a pluralistic ethic, valuing compassion, justice, ecosystems, species and reason (Batavia, Bruskotter et al., 2021).

Furthermore, incorporating ethical concerns into conservation is similar to the view of Soulé, the founder of conservation science, who saw it as a crisis-oriented discipline that included ethics and the social sciences. Admittedly, he had a different assumption to begin his ethical thinking (1985)—species and biodiversity have intrinsic value. Compassionate conservationists like Wallach, Berghoff, Batavia and Nelson see criticism as often being informed by a commitment to ethical theories allied with instrumentalism, collectivism and nativism rather than strictly scientific concerns.

Suppose traditional conservation remains embedded in an imperial utilitarian model of dealing with environmental issues where animals are only placeholders in a larger whole. In that case, we cannot help but call on the need for what Deborah Bird Rose calls a ‘crazy love’ that joins in with the howl, scream or sigh of animals poisoned with 1080 on New Zealand’s killing fields. This is what the anti-1080 movement is about.

We end with Albert Schweitzer’s (1931) concept of ‘fellowship of those who bear the mark of pain’ which we could extend to all living beings. Here:

A man is really ethical only when he obeys the constraint laid on him to help all life which he is able to succour, and when he goes out of his way to avoid injuring anything living. He does not ask how far this or that life deserves sympathy as valuable in itself, nor how far it is capable of feeling. To him, life as such is sacred. He shatters no ice crystal that sparkles in the

Beware of the Human

*sun, tears no leaf from its tree, breaks off no flower, and is
careful not to crush any insect as he walks.*

Religious Allusions

In the beginning, when God created the heavens and the earth, the earth was a formless void and darkness covered the face of the deep, while a wind from God swept over the face of the waters. Then God said, 'Let there be light'; and there was light. And God saw that the light was good. ... And God said, 'Let the earth bring forth living creatures of every kind: cattle and creeping things and wild animals of the earth of every kind.' And it was so. God made the wild animals of the earth of every kind, and the cattle of every kind, and everything that creeps upon the ground of every kind. And God saw that it was good.

Genesis (1:1-4; 24-25)

When he opened the sixth seal, I looked, and there came a great earthquake; the sun became black as sackcloth, the full moon became like blood, and the stars of the sky fell to the earth ... for the great day of their [the one seated on the throne and the Lamb] wrath has come, and who is able to stand? ... Then I saw a new heaven and a new earth.'

Rev (6:12-13,17; 21:1)

As tragic as animal extinctions are, they do not threaten human civilization. If we want to save endangered species, we need to do so because we care about wildlife for spiritual, ethical, or aesthetic reasons, not survival ones.

Michael Shellenberger (2019)

Communities are told that 1080 is the only solution, that it has to be used and will be used, and that they just need to accept it. The science, then, has been used to try to shut-down debate and shut communities out of decision-making. It has forced those concerned to have to take-to-the-streets to be heard [a perfect ground for apocalyptic views to develop].

Wayne Linklater (2019)

The first passage at the beginning of the chapter comes from the biblical story of creation. In the narrative, the world comes into existence, created by God in six days and resting on

the seventh. The second quotation is from the 'Book of Revelation', the last book in the New Testament. In 'Revelation', evil forces dominate the world, and a battle is waged against them. At the end of the book, 'a new heaven and a new earth' come about. For most commentators, this signifies a transformed heaven and earth rather than an entirely new heaven and earth.

Throughout history, various people have commented on these sacred stories or myths. Scholars studied them from numerous disciplines, applying different interpretations—literal, allegorical, metaphorical and poetic. Many readers of these writings use the stories as metaphors to comment on present concerns. People have used them in their fight against oppressive aspects of life and against those who would overwhelm them. For the anthropologist Lévi-Strauss, myths serve as foundational elements of culture and possess their own logic (1994: 65). We can consider both the myth of creation and revelation as somewhat foundational to Western civilisation. And while some biblical scholars claim the right to say what the stories mean; many people have incorporated them into their cognitive schemas. These schemas help them negotiate their way through life.

Even though these narratives are well known, it is still surprising to find references to them in environmental literature, including those on 1080. Robert Nelson, an economist and professor of environmental policy, has criticised the presence of aspects of these narratives in conservation writing. He says allusions to religious texts in conservation can be both poor science and poor theology (Nelson, 2009: 172). But I disagree with this view. Despite what the purists say, incorporating these stories into one's cognitive makeup is just what myths are about. Of course, that does not stop theologians and biblical scholars from shedding light on how they are used or the implications of such use. In the same way that Michael Morris (Ch. 2. p.17) shows that environmentalists using war metaphors need to consider the context from which they have been taken, the

context in which religious metaphors have been taken also needs consideration.

One understanding of religious metaphors in environmental writing is that a crossover of interests and concerns exists between religion and environmentalism. Robert Nelson, Joel Garreau and Michael Crichton go even further and postulate that environmentalism and ecology are modern secular religions in themselves. Thus, novelist Crichton (who also studied anthropology and medicine) perceives environmentalism to be like Christianity, especially as seen in its mythology:

'There's an initial Eden, a paradise, a state of grace and unity with nature, there's a fall from grace into a state of pollution because of eating from the tree of knowledge, and as a result of our actions, there is a judgment day. ... 'We are all energy sinners, doomed to die, unless we seek salvation, now called sustainability. Sustainability is salvation in the church of the environment'.

(Crichton, in Garreau, 2010: 61)

Even if what Crichton says is not true, following up on the use of these religious narratives in environmentalist writing could be of interest. In the first section of the chapter, we will examine the Genesis story, and in the second section, we will examine the Book of Revelation. This examination may help us understand what their presence in conservation discourse reveals about conservation issues.

Genesis and The Garden of Eden

Most people are familiar with the general outline of the creation story in Genesis and other stories in the Old Testament. These include the fall, Cain and Abel, Noah, the tower of Babel and Exodus. In chapter four, we showed how early modern scientists, like Descartes and Bacon, took up the notion of dominion from Genesis 1. They interpreted the concept as mastery over or dominating nature, a view still seen in the current mechanistic attitude toward the world.

Carolyn Merchant gives her interpretation of the original Genesis story in *Reinventing Eden*. For her, the expulsion from

Eden story led to two recovery narratives, which are still prevalent today. First, a dominant upward ‘progressive’ tale of regaining paradise after the fall, by dominating and subduing nature through science, technology and capitalism. Merchant understands this story as related to the historical Christian narrative of Eden before it become secularised (2003: 10-11, 18, 20, 24). The second recovery narrative takes a declensionist, more environmental perspective, where the world is understood to have declined after the fall. However, as stewards, humans can reverse this decline with careful work in a sustainable manner (2003: 10-12, 23-24). Merchant characterises both positions as ‘anthropocentric’—believing that intrinsic value lies only with humans (2003:24). She proposes a third view based on a partnership between humans and nature (2003: 11, 210). As we show later in the chapter, this third position can also be observed in the Biblical account of creation and other books of the Bible.

Aspects of all three views can be discerned in some conservation writings, including those on 1080. To begin with, let us go back to Van Vianen et al.’s (2018) study of 1080 poison. This study makes no explicit reference to religion. The paper looks scientific with its rational (although instrumental rationality) and mathematical (statistical) reasoning in presenting results. The conclusion the text comes to is that 1080 is one of the safest and most cost-effective methods for conservation management, and it benefits native birds (2018: 176). But, despite not mentioning biblical themes explicitly, the references to cost-effectiveness and environmental management in returning the forest to its previous state evoke Merchant’s recovery of paradise narrative, which is carried out in a mechanistic manner. Here, experimentation and mathematical calculations are valued. Also, a model of decline is implied. The authors show that a declining ecosystem can be brought back to life by using poison as a tool. Thus, a restoration paradigm is operating, indicating that a return to the way things were in the past is possible.

We notice a similar theme of decline and recovery in Wright’s (2011) report, ‘Evaluating the Cause of 1080’. Religious allusions here are more explicit. In the report, Wright begins by confessing

to experiencing a vision. She denies, though, a propensity for having such experiences. The vision is ‘the restoration of abundant, resilient and diverse bird life on New Zealand’s mainland’ (2017: 5). In places, the report describes New Zealand before humans arrived. On page twenty, New Zealand is described as a ‘food paradise’, at least for the kiore rat that came to the country with the early Māori settlers. After humans arrived, the paradisiacal structure of the country was viewed as declining. The decline increased when the Europeans landed, accompanied at different times by various predators. Mention is made of an ongoing war against the predators that have caused this decline, with 1080 being a major weapon or tool used in this war (2017: 16). And it is announced that once the battle is won, a restoration to a time when birds were in abundance will occur, despite Wright’s acknowledgement that ‘the clock can not be turned back’ (2017: 78, 97-99). Furthermore, the scripture-inspired theme of progress through science, technology and imposing solutions upon nature can be noticed in the document. Wright’s report, then, is an excellent example of explicit biblical themes used in pro-1080 writings.

Another example of biblical allusions used in conservation is by Sir Robert Fenwick, a former chair of Predator Free New Zealand. He speaks of the movement for a predator-free New Zealand as a ‘crusade’ and a project born in a ‘leap of faith’ (Fenwick, 2017). Elsewhere, Fenwick labels the project as a possible ‘Noah’s ark floating in the South Pacific’ (2018: 7, 28). One would have difficulty finding more explicit religious language than that.

The work of environmental journalist Dave Hansford, *Protecting Paradise* (2016), makes even more robust use of biblical allusions. This is despite his general stance of only valuing scientific input and his statement that science differs from belief, religion and myth (2016: 112, 154-155, 157). We first note the title of his book, *Protecting Paradise*. The work implied by the title would fit well with the job given to humans in the second chapter of Genesis (2:15)—to serve and protect the earth—or would it? The second chapter is titled ‘The Ark at the End of the World’.

Here, Hansford describes Aotearoa (New Zealand) as ‘a kind of Eden’ (with reference to Noah’s Ark), at least before humans arrived (2016:15). Through hard work and dominating nature, we can win the battle—another example of a recovery narrative. Hansford also uses the Isaiah quotation on the wolf feeding with the lamb (Isaiah 65: 25) to point out that New Zealand’s wildlife has not existed in harmony with introduced ‘pests’ and never will (2016: 255). For him, paradise cannot be reached until we have eradicated pests. And to do this, we need 1080 poison.

In the writings we have considered, we have found no signs yet of Merchant’s third option—working in partnership with nature. As mentioned, we can see this approach in scripture. In Genesis, the account of Noah and the ark represents a type of relational and partnership ethic, a covenant between God and all living beings (Genesis 9). We can add here the verses in Isaiah about the lamb and the wolf living together (Isaiah 11: 6; 65: 25), which, as we have seen, Hansford also uses in his book. However, using passages from Genesis and Isaiah to help justify human dominance and the eradication of predators shows a misunderstanding of the source of the passage and the way the original writers understood it. We would have to include the verse following that of Isaiah 11: 6-8 to fully understand the verses mentioned: ‘they will not hurt or destroy on all my holy mountain’ (Is, 11: 9). Contemporary theologians such as Ray Maria McNamara (2009), and Mari Joerstad (2016), hold that these passages are about the relationship and partnership of humans with all beings.

So, Pederick points to the Isaiah passage as invoking the idea of shalom—a ‘peace within diversity’ in the world—as God always intended and as portrayed in the initial part of the Garden of Eden story (2014: 6-7). This peace is for all beings, not only the favoured or charismatic few. It is for humans and non-humans, ‘the wild and domesticated animals, predator and prey’ (Pederick, 2014: 8). It would, then, include the possum and the rat. But this peace can only be achieved through coexistence and partnership rather than warfare and destruction. Likewise, the story of Noah is characterised by this relationship theme (Genesis

7-9). In the story of Noah, we perceive Noah taking every type of living being, whether clean or unclean, useful or non-useful, cute or not, into the ark. Accordingly, to cite Isaiah, the stories of Creation and Noah, which describe all beings living together, is to talk of a return to an Edenic form of life. Yet, to achieve this peaceful, idyllic life, we must give up the will to power, as the story of the fall reveals (Pederick, 2014: 8). For this reason, associating these biblical passages with the use of 1080 does not fit the bill. Rather than using violence and dominating nature, as the mechanistic science derived from Bacon and the early scientists advocated, these passages teach respect for all life and peaceful means of resolving disputes. Therefore, the use of the paradise motif that does not draw attention to this 'peaceful means' does not do justice to the meaning of the text.

A similar disassociation from the idea of force to reach paradise is found in 'The Tower of Babel' narrative (Genesis 11). In this story, the humans of Shinar refused to live as contingent, dependent beings, among others. So, they decide to go it alone by constructing a tower that reaches up to the heavens—an early example of a technofix. But the plan was too over the top and failed. The people involved fell from the tower, forced by God back into the ordinary world of being one creature among many. In this story, one can view the building of the tower as analogous to Adam and Eve's and later Bacon and Descartes' attempts to become masters of the world and, in the process, alienating themselves from the world. We can, similarly, perceive the taking up of a position of mastery over the world in the grandiose vision of gaining paradise by poisoning predators as a technofix. Pederick says of this attitude of mastery: 'Things go awry due to our deep-down desire to make the world around us conform to our own fantasies of control' (Pederick, 2014: 8).

We observe the above themes of the Old Testament repeated in the New Testament. In the story of Jesus in the Garden of Gethsemane (analogous to the Garden of Eden) (Mathew 4), he refuses to take up a destructive attack against his aggressors, just as he had previously refused to accept the devil's invitation to rule the world. He continues to maintain his idea of 'kingdom' as a

peaceable kingdom, as in Isaiah; and as seen in the injunction given to Adam and Eve to care for and protect the earth (Genesis, 2: 15). Jesus' kingdom', then, can be understood as a parody of Roman kingship based on power and the destruction of enemies. Pederick maintains that the 'shalom community' manifested in these stories is not about a return to an original paradise but the creation of a 'shalom community' in the present day (2014: 9). Such a notion is also found in Tolstoy's *The Kingdom of God is within you* (1893), Schweitzer's 'reverence for life' and Martin Buber's 'I/Thou' relationship that places the other as a subject, not as an object.

Ecologist Chris Thomas' book, *Inheritors of the Earth: How Nature is Thriving in an Age of Extinction*, seems at first to possess a relational ethical framework like that mentioned above. There is one chapter titled 'Noah's Earth' where Thomas shows concern for the flourishing of both animal and plant life. Here, humans are not separated from other beings. Pursuing a paradisiacal goal does not entail resisting nature and trying to eliminate alien or introduced species to return to how the world used to be (2018: 8-9). In his work, no creatures exist on earth that should not be here; there is no difference between introduced and native species (2018: 8, 108-111, 234).

Additionally, Thomas argues that most humans and non-human animals come from somewhere other than where they are now, and non-human animals have moved to different places on their own accord as well as because of human actions (2018: 23-24, 85, 91-92, 103, 105, 188, 190, 201). In this respect, he points out that most of the wildlife in New Zealand did not exist while New Zealand was part of the Gondwana continent but arrived here in later times and evolved to be what they now are (2018: 106-107).³⁹ Likewise, the flora in New Zealand has doubled because of the introduction of new species, and vertebrate species have also increased (2018: 124-125, 133). Finally, Thomas does not hold that the predator-free policy would work and maintains that it is better to 'go with the flow' and appreciate the diversity of species that we have (2018: 122-125). These points would seem to make Thomas a universalist—all species will be saved—and an

ideal example of Noah's position, allowing all types of living beings to enter the ark.

Yes, Thomas has a restorative principle at work, one where paradise is not in the past but in the future, with a central role played by humans. In this view, human existence is beneficial for life on earth. And although he admits humans have caused some species to become extinct, he also holds that they have helped increase biodiversity, which will continue in the future (2018: 5, 243, 249-250). Thomas calls this increase in biodiversity 'a sixth Genesis' (2018: 250), parodying the idea of a sixth mass extinction coming about because of human destructiveness. So, we can consider his view a declensionist one, where humans are stewards of creation. Despite this positive understanding of all life, we also notice that there is more to this view than first thought, which is the position given to humans. For Thomas, there seems to be little that human beings can do that is wrong (unnatural) because they are part of nature (2018: 207). They can produce creatures however they want by genetic engineering, breeding hybrids, de-extinction and resurrection biology—bringing extinct animals back to life. These are all natural acts humans can undertake to create paradise (2018: 126, 184-197, 230, 238-239, 242). He says: 'We can be adventurous and use whatever technological or other strategies might be available to us' (2018: 230). Present then, in Thomas's view, is an inflated account of human beings and their place in the world based on the mechanistic science that we are heirs to—paradise engineering. As such, we perceive in Thomas' vision an almost godlike posturing like those in the biblical tower drama who claim they can reach their goals, without cooperating with the whole earth community. So, the restoration he aims for will be achieved by human manipulation and technological imperialism rather than through relationships within a shalom community, as the Genesis writing encourages.

In the community-centred story of Noah, representatives from all species are saved. That said, they went on to fear humans (Gen 9: 2). In hindsight, they were right to do so. We perceive this in what Thomas believes are positive examples of biodiversity due to human intervention—the existence of many cows,

chickens, sheep, etc. (2018, 46-47). For him, they are significant winners in the evolutionary game of survival of the fittest. However, I'm uncertain as to whether or not these animals would feel like winners. Despite having large populations, do not these animals now lead more impoverished lives? Has not the industrial, agricultural enterprise enslaved them by imposing its control over nature? Would not the biblical injunction 'Do not muzzle the ox that treads out the grain' (Deut. 25:4) be an injunction worth following? So, while we do not discover a partnership ethic in Thomas or pro-1080 advocates, we encounter it in some environmentalists already mentioned: Gilbert White, John Muir, Aldo Leopold and others. We also find this ethic in the compassionate conservation movement and environmental humanities.

Jamie Steer's work in New Zealand exemplifies the relationship with nature ethic. Contrary to some who advocate for the use of 1080, Steer does not condemn introduced species. Rather, he sees humans as having some responsibility—we brought them here, so we should take responsibility (Steer, 2018). He speaks of reconciliation with introduced species and learning to coexist with different species, whether native or introduced. His major work on these issues is his doctoral thesis, *The Reconciliation of Introduced Species in New Zealand* (2015a). In this work, Steer does not separate humans from nature as being entirely different and distinct. Nor does he recognise some species as winners and others as losers, like Thomas. For Steer, some species need more help and management to survive, while others can fend for themselves (Steer and Linklater, 2018). No animal is left out of the count—see 'When all life counts in conservation' (Wallach, Linklater, Steer et al., 2020). Steer also has a more modest outlook than some other conservationists. He does not take the 'Tower of Babel' route of 'measureless presumption' (getting rid of all predators) to get to paradise but suggests a lighter touch as preferable (Steer, Radio Interview, 2016b).

Furthermore, unlike many people in conservation, Steer places conservation science within another dimension, an ethical

dimension. He can be regarded as a universalist. His ethical stand is not a morality of dos and don'ts but one of compassion—learning to live with introduced species rather than wiping them out, reconciliation rather than being at war or attempting to restore a past that never was. He writes about the value of respect, affection and responsibility for nature, both native and introduced (Steer, 2015a: 4, 340, 343; 2018: 11-20; 2016b: Radio NZ).

Even though Steer does not use the term 'paradise', his concept of reconciliation is what some theologians would consider paradise. It is a place we make for ourselves in relationship with other beings, not by regressing into a past that does not exist or constructing one in the future through grandiose schemes. Instead, we create paradise by taking on responsibility, humility, and concern in the present. Not by dominating nature 'to wrest its secrets from it' (Bacon) for the benefit of humans or those species we consider best for the environment but by service and cultivating an ethic of relationship with all living beings.

In *The Hebrew Bible and Environmental Ethics: Humans, Non-humans, and the Living Landscape*, Mari Joerstad explores how 'the Hebrew Bible shows its writers viewed nonanimal nature as active and alive, that is as a person' (2016: 2). In New Zealand, both the Te Awa Tupua River (Whanganui River) and Te Urewera National Park have the legal rights of persons, which I agree should be the case. But if non-animal beings can be considered persons with rights, should not all animals with sentience have similar rights?

Apocalyptic Discourse

As we navigate our way through life, we rely on a variety of resources from our cultural and social backgrounds. Among them are stories, myths, values and rituals. These help form cognitive schemas or lenses that enable us to interpret and understand the world. We have seen how the Genesis story provides one such schema. Another one is apocalyptic discourse. We can say of this discourse, another type of myth, that 'it is 'good to think [with]', as the French anthropologist Claude Lévi-Strauss said of animals and totemism (1962: 89). Accordingly, apocalyptic discourse will

be used in this section to assist us in further understanding the issues involved with using 1080 poison.

To be sure, the use of apocalyptic discourse has been criticised. Some perceive it as negative, simplistic, fantastical and divisive. Political scientist Alison McQueen, for instance, claims that apocalyptic language can create the illusion of moral clarity by developing a simple good and evil, them and us, view of other people. This makes it easier, she says, ‘to use terrible means—war, torture, genocide, and nuclear annihilation [and, dare I mention, poison]—to achieve our ends’ (Chelsey, 2018). For this reason, McQueen expresses reservations about using such a language. While McQueen’s criticism is of apocalyptic rhetoric in political discourse, some might argue the same when it is used in other situations.

Nevertheless, we can note positive aspects of this genre. It can help us articulate, albeit in symbolic form, what is difficult to grasp and what should not be accepted, but what the establishment sets forth as rational and what should be accepted. This positive use of apocalyptic language is mainly present in situations of power imbalances. In such cases, it can give hope and empowerment to the oppressed and those not connected to the establishment’s view. Moreover, knowing how the genre works can help us better understand problematic areas, such as the debate on using poison. In this debate, we find apocalyptic themes on both sides. Therefore, understanding this genre can prevent us from viewing the controversy just in terms of facts, seeing one side as right and the other as wrong. Such a simplistic way of understanding the conflict ignores other elements of the issue such as the politics of professionalism, management policies and bureaucratisation which can exclude others from hearing their view. Also ignored is the rhetorical posturing involved in fact-stating.

However, those outside the circles propagating an apocalyptic view may have problems understanding them. After all, an apocalyptic discourse for one person may be their imagination running amok for another. Such a discourse might seem exaggerated and implausible. And those promoting apocalyptic

stories may seem simplistic, weird or even mad. Even so, madness often has a logic of its own, as the anti-psychiatrist R. D. Laing showed. Similarly, there is a logic to myth, as Lévi-Strauss showed, and a logic to apocalyptic discourse, which I hope to show. But to overcome the difficulty of understanding the apocalyptic genre in the 1080 discourse, we must first examine its origins and purpose.

The word apocalypse comes from the Greek meaning revelation, unveiling or disclosure. In Western culture, apocalyptic language often comes from the Bible and the Book of Revelation (Revelation). John, the apostle, describes near the start of the book a vision of heaven with God on the throne, a slaughtered lamb nearby, and 24 elders and four animal-like creatures around them. Later, all the creatures in the world who honour the one seated on the throne and the lamb join them (Rev 4). Fire, hail, earthquakes and plagues are unleashed on a condemned world. A dragon representing the devil, and two beasts appear. Battles rage and Armageddon is mentioned—a battle at the end of the world where the devil and his army are destroyed. Finally, a new heaven and earth emerge.

Much of the above phenomenon is symbolic. Thus, one beast represents the Roman emperor, and the other represents the religious establishment. We can, though, interpret the symbolism in a variety of ways. Such flexibility is not always negative. It allows people to insert themselves into the story and gain insight into their lives. Many theologians consider Revelation to be about Jesus' death and a new kingdom emerging in the community that grows around Jesus after his resurrection. This interpretation contrasts with the literalist view of the earth's destruction at the end of time and the creation of a new one.

First, we can view Revelation as giving hope to those persecuted by the Romans. As theologians Catherine Keller and John Thatamanil say, Revelation is not about the end of our world but the end of John of Patmos', the writer's world (2020). The writing gives security to those living among the suffering. They are introduced to a new language that helps them make sense of their experiences. But more broadly, commentators

identify the book of Revelation as symbolic of hope and a means of coping for people of all ages.

Second, the story provides more than just hope. Anthropologists would understand it as a resistance discourse. We could say that the resistance discourse gives people hope. It opposes the imperial rule of Rome. The discourse contains symbols unknown to people outside of those who hold the belief. Thus, as mentioned above, the beast represents the emperor. Of course, the slain lamb is Jesus, who was raised from the dead. The establishment tortured and killed Jesus, but the early Christians perceived him as saviour, Lord, Son of God, and king with a vast kingdom, despite what at first looked like failure and weakness. We can view this account as a parody, a mockery and a questioning of the power of the Roman Emperor, also known as the Lord and the Son of God. It forces people to question what a kingdom is. The story of Jesus challenging power and establishing a different type of kingdom can serve as an example to people in other times when the establishment's hegemonic discourses are oppressive.

So, having looked at the meaning of apocalyptic language in the scriptures, we can now reflect on the relevance of Revelation concerning environmental issues. We notice first that the story uses the whole of the cosmos as its setting. It is not just abstract philosophy. The earth, sky, moon, sun and various animals are all part of the story. Second, in one chapter, the earth is personified and comes to the aid of the women pursued by the dragon (Rev. 12: 16). And third, the humans and animals around the throne and the lamb can be seen as a metaphor for life in the Garden of Eden, as can the book's last two chapters. Indeed, the entire story of Revelation can be understood as a repetition (here in terms of freedom from Roman domination) of the Exodus story—the journey from enslavement in Egypt to being freed and given the promised land, which is itself a metaphor for a return to Eden.

As theologian Micah Kiel points out, the Romans held themselves to be masters of people, animals, the land, the sea and the entire world (2017, Ch. 3). He notes the environmental devastation tied up with this domination: air and water pollution

caused partly by mining, deforestation and animal extinction caused by the empire (2017, Ch.3). Kiel sees Rev. 9, the darkening of the skies with smoke like a massive furnace, as a reference in story form to the empire's pollution (2019, Ch. 3, 1). In the narrative, the local Christian people are getting their own back on the Romans. The venationes that involved the slaughter of millions of animals can be taken as a ritual symbolising the power of the Roman establishment over nature (2017: Ch. 3, 2).⁴⁰ In contrast, the scene of animals and humans worshipping the Lamb (Rev, 4-5) represents a new way of living, in a community with others, rather than by power and force.

For writers such as Kiel and Pablo (1995), the Revelation narrative acts to question and change people's attitudes towards what is happening. The very strangeness of the stories helps to do this. They counter the dominant hegemonic discourse of the establishment and point to new ways of being in a relationship with the earth. Fundamentalists argue that the end of the story is about being taken up into heaven in a rapture. However, many others view it as about heaven coming down to earth, thus giving value to the earth, as in Genesis (1: 10), where the earth was said to be 'good'. Revelation thus appears to be opposing the Romans anthropocentric attitude and in contrast adopting a theocentric perspective, as seen in depictions of humans and non-human life centred on the throne of God rather than the throne of the emperor. One can observe depictions of this peaceable kingdom in the artwork of 18th century Quaker Edward Hicks.

Now that we have examined apocalyptic ideas as they relate to Revelation, we will explore how they relate to modern environmental concerns. In this respect, it is worthwhile to consider the environmental policy writer Michael Shellenberger (2019, 2020), who accuses some environmentalists of propagating apocalyptic ideas when they make statements like:

It's difficult to see how we could accommodate a billion people or even half of that if Earth warms four degrees earlier this year.... and 'The potential for multi-breadbasket failure is increasing.... If sea levels rise as much as the

Intergovernmental Panel on Climate Change predicts, it will be an unmanageable problem.

Shellenberger also mentions the idea in conservation circles of a sixth mass extinction, which he does not accept (2019). To him, this belief and the above statements made by conservationists are apocalyptic ideas that he considers exaggerations and untrue. Shellenberger accuses many environmentalists of having apocalyptic beliefs compared to his more rational thoughts—‘getting facts and the science right.’ Nevertheless, we can view his labelling of other’s ideas as apocalyptic compared with his more rational views as an example of rhetoric and posturing. We also detect hints of apocalyptic thinking in his own work, not so much focused on destruction but on the positive view of the future world emerging with the help of economic growth and modern technology such as atomic energy.

Shellenberger presents the above ideas in more detail in his book *Apocalypse Never*, reviewed by environmental scientist Peter Gleick (2020). According to Gleick, the book is ‘deeply and fatally flawed.’ On the other hand, another scientist, Tom Wigley, praised the work (Wigley, accessed August 4, 2022). Wigley writes, ‘This book might be the most important book on the environment ever written’. And another reviewer labels it as fact-based (Gamboa, accessed August 4, 2022). Regardless of whether his or others’ viewpoints are apocalyptic, Shellenberger reveals apocalyptic language as existing in establishment discourses and also in anti-establishment discourses.

We can now turn our attention to apocalyptic themes within the 1080 discourse. It is easy to depict the anti-1080 movement as apocalyptic and as a resistance movement against the environmental establishment with its leaders or high priests who advocate a technomanagerialist way of tackling the problem of species extinction. Faced with such a hegemonic discourse, an apocalyptic narrative provides an alternative point of view. It functions as a resistance discourse. Establishment views are parodied, satirised and exaggerated by using apocalyptic narratives to criticise them, thus drawing attention to one’s point of view.

Satherley reports apocalyptic themes in the following beliefs: 1080 is employed in a plot to exterminate human life; it is a money-laundering project or an attempt to control world food supplies (Satherley, 2018). However, I have not encountered these ideas among anti-1080 people, and I suspect these accusations are themselves apocalyptic.

As Shellenberger shows, environmental movements sometimes take on apocalyptic themes. But contrary to Shellenberger, apocalyptic features in discourse do not necessarily negate the truth of the matter. Such a discourse often presents the truth using figures of speech, such as parody, metaphor, and allegory. In New Zealand, the establishment's concern with predators is characterised as apocalyptic in the following headlines on *The Atlantic's* website: 'The Rat Apocalypse in New Zealand' (Spangler, Myszkowski and Cadieux, 2019). We also notice in New Zealand instances of macabre killing rituals like the Roman venationes, such as possum throwing competitions, possum killing competitions (removing the babies from the mother and drowning them) and a beauty contest featuring dead possums (Neumann, 2010; Stuff 2012; Tulloch, 2017). In one situation, two groups of people in a park were throwing a dead possum at each other. A comment was made, 'we've got the guts coming out' (One News, 2020). In these possum-killing rituals, human supremacy is enacted in the same way it was in Roman rituals.

While 1080 opponents may show apocalyptic themes when talking about wanting to be saved from the toxic, destructive and catastrophic effects of 1080, supporters might show apocalyptic themes when talking about being saved from the destructive effects of possums and rats (these animals being the secular anti-Kiwi, like the anti-Christ in Revelation). But given that pro-1080 adherents and the establishment want to portray their position as based on science, rationality and facts, it is surprising to find apocalyptic themes in their work. For example, when talking of the increase in predators, Maggie Barrie, a former conservation minister, uses the apocalyptic term 'biblical proportions of plagues' of [rats] (Gudsell, 2016). Former conservation minister

Nick Smith uses the same phrase (Newshub, 'Expanded 1080 drop to curb 'plague' of rats' 2014). In addition, the former National Possum Control Agencies published works such as 'The Possum Busters Are Coming' and 'A Plague of Rats' (Holm, 2015: 36). Likewise, we observe apocalyptic themes in Hansford's writing. The return to paradise theme appears in the title of his book, *Protecting Paradise*. But for him, we will only reach this goal by killing nonhuman animals with 1080, a view reminiscent of the venationes. Chapter three of the book is titled 'A Plague Upon Our House' and Chapter fourteen 'There Will Be Blood'. The titles evoke the passages in Revelation concerning plagues and a river of blood (Rev. 15-16). Hansford describes in Chapter 22, 'Rambles in Dystopia,' a conflict between those following the establishment's ideas about conservation and its doctrine on the use of 1080 (the 'good guys' in Schuster terms) and those opposed to it the 'bad guys'. He lays down an 'Either you're part of the problem [an anti1080 believer] or you're part of the solution' [a 1080 believer] and concludes, 'It's as simple as that' (Hansford, 2016: 264). This way of phrasing a statement would seem to be based on an apocalyptic tendency for all-or-nothing thinking and a dichotomy of good versus bad, mentioned both at the start of this chapter and (Chapter 4, p. 48) when referring to Schuster and his view of the way scientific knowledge is constructed.

Given the apocalyptic discourse within the establishment's policy on 1080, we could ask what we should make of such a phenomenon. Professor of English Language and Literature Teresa Heffernan's (2015) article, 'The Post-Apocalyptic Imaginary: Science, Fiction, and the Death Drive' proved helpful in answering this question. As she sees it, the modern world we have inherited from the scientific revolution of the 17th century and the enlightenment of the 18th century rests on reason, science, objectivity and technological innovation. Secularism could also be included. These support a central concept of modernity: the value of progress. For Heffernan, the 'high priests' of science promote the idea of being human (and of nature) as a master management programme led by experts, with the rest of the population

needing to follow these leaders. A position such as this ignores the tricky bits, such as emotions and empathy, which impede the rationality that the establishment is trying to propagate (Heffernan, 2015: 74). Despite its apparent secular origins, this vision of progress and life can be considered an adapted version of the Christian apocalyptic tale of a new paradise, but one gained through dominating nature. We have already discussed restoration ecology and invasion biology as aspects of conservation based on this vision. We could add the use of 1080 poison to eliminate 'pest' species.

Heffernan, however, criticises the emphasis on progress. To her, this vision of increased growth and progress has faltered. Many people no longer believe it to be the world's vision because it has failed to deliver the promised goods. She states that a major reason for this disillusionment was the co-option of science by the military and the state for the work of civilisation, exemplified in the industrial scale killing seen during the first and second world wars. This led to the mechanical/technologically induced deaths suffered by millions (Heffernan, 2015: 70). Likewise, we can perceive this mechanistic approach to a problem in modernity's attitude towards nature. One example is in New Zealand's killing fields, where 1080 is spread, resulting in millions of animals suffering. Some say that the killings have not solved the problem, but there may be hope if we intensify the killings.

The almost blind faith in industrial-technological progress until undermined by the results of the warmongering of the two world wars can be seen as suppressing 'the dark underbelly of twentieth-century science' (Heffernan, 2015: 68). Climate change, inequality, housing shortages, Covid and the war in Ukraine add to the doubts about the modernist promise of progress. Because of this sense of doubt, Heffernan argues, there developed a post-apocalyptic or post-modernist world without the same commitment to or belief in the modernist agenda. However, many people in the establishment still support modernist values and ways of viewing the world. We can add here the development of a post-secular world where apocalyptic ideas are not

prohibited. Indeed, in such a world, apocalypticism can offer some insight into the current situation.

We observe apocalyptic discourse leading to insight into the debate on 1080, in the situation where advocates push the ideas of technological progress, rationality, objectivity and belief in facts as a way back to paradise. They fail, though, to realise that their rationality is limited to instrumental rationality. Alongside their relentless and frenzied poisoning of the country, something else can be discerned as being at play, other than pure rationality. Their continual citation of a litany of facts and frenetic increase in poison usage seems to hide something—a darker side to the project.

Heffernan (2015: 70-71) uses Freud's work to explain the loss of faith in modernity and the shift to post-modernity. While Freud initially believed human behaviour was guided by an instinct for satisfaction, he came to doubt that notion as he encountered many veterans who kept re-experiencing their traumas. Observing the repetition of traumas in dreams and behaviour, he proposed that humans also possess a death drive. This drive presents itself because these traumas remained unprocessed, undigested and unspoken. The negative behaviour stemming from this repression is irrational and does not respond to reasoning. So, one needs to get over them, cover them up or repress them. By repressing or denying these experiences, a person might then unconsciously channel the hostility and anger they experience into a drive for mastery. Perhaps the killing frenzy acted out in DoC's poisoning is an example of this hostility and the anger directed towards a drive to mastery. It may be helpful here to revisit Von Hofmannsthal's account of the poisoning of the rats, where the protagonist confronted the demons and the horror he had unleashed. Thus, he could experience what it was like for the rats to suffer from his destructive behaviour. Unfortunately, some people are unaware of this destructive drive and are doomed to repeat it or engage in obsessional activity and instrumental reasoning to avoid a

recurrence of the doom. The act of channelling anger into aggressive action is not unique to a single individual but can be adopted by an entire society. It is as if society's past traumas affect the whole of society. So instead of PTSD, we have a post-modernist stress disorder that covers over with a hyper rationality regressive, destructive behaviour such as the killing frenzy carried out with 1080 poison.

This force directed towards the work of mastery preserves the blind faith in science, industry and military-driven technology, the backbone of modernity. We remember, here, that DoC sees killing predators as a battle and poison as a tool. The obsessional activity numbs the awareness of the destruction involved. There is a need to keep the movement going to keep the horrors of the trauma from returning. So, even more poison is used, and a grandiose scheme is devised to kill every predator.

Similarly, Heffernan points to the distressing tension between what happened in the past and promises of technological progress as causing the repetition of post-catastrophic worlds in literature, films and television of the postmodern age (2015: 72). She also argues that the reproduction of such worlds can disrupt the instrumental will to power that promises progress but unleashes violence. Because of this disruption, an ethical impulse can develop (2015: 75).

Similar points may be made about the apocalyptic aspects of the establishment's environmental discourse. While apocalyptic themes in environmental discourse do not break the modernist commitment to rationality, science and technological progress that supports the use of 1080 poison, they may function as a Freudian slip. This slip can reveal another discourse beneath the rational one. Sometimes the apocalyptic discourse of both the establishment and anti-1080 proponents can serve as a slip to reveal an underlying irrational discourse in the establishment's discourse. First, we discover the presence of violent and destructive impulses. Now that the destructive nature underlying what appeared as rational is revealed—the millions of animals poisoned by 1080—a new rationality, a non-instrumental one, can

occur. This is ethical reasoning, which is no less rational but different from instrumental rationality. This reasoning can lead to an ethics based on relationships and listening to the other; in this case, the nonhuman other.

In the writings of Paul Feyerabend, a philosopher of science, we observe how this process of deconstruction of hegemonic discourse can come about. He says (1978: 30):

A scientist who wishes to maximise the empirical content of the views he holds ... must therefore introduce other views; that is, he must adopt a pluralistic methodology. He must compare ideas with other ideas rather than with 'experience' and he must try to improve rather than discard the views that have failed in the competition. Preceding in this way he will retain the theories of man and cosmos that are found in Genesis, or in the Pimander He may then discover that the theory of evolution is not as good as is generally assumed and that it must be supplemented, or entirely replaced, by an improved version of Genesis. . . . Experts and laymen, professionals and dilettanti, truth-freaks and liars - they are all invited to take part in the contest and to make their contributions to the enrichment of our culture.

Hence the work of the anti-1080 movement and this book—to help, even by embodying Rose's crazy love, to deconstruct the rational will to power in the establishment's discourse of poisoning nonhuman animals; so as to allow another discourse, one of compassion, to come about.

Conclusion

The significant problems we face today cannot be solved at the same level of thinking we were at when we created them.

Albert Einstein

It should, therefore, be concluded that human interference and management of nature should be done with far more care and humbleness than previously done. As humans, we should not (again) fall into the arrogance trap by thinking that we know exactly what is required to put the earth back on its tracks. Declaring ourselves as 'responsible stewards' over the earth may therefore merely be a hidden new way to affirm human dominion, human arrogance and anthropocentrism.

Peet J van Dyk (2015: 533)

Only the other day, during the coronavirus lockdown, we took the dogs for a walk on the quiet country road where we live. On the way back, I saw a brownish, elongated object, which looked like a piece of wood, at the roadside in the gutter. The dogs showed an interest and moved towards the object, and I then noticed a slight movement—he or she was alive. I could not tell at first whether the animal was a possum or a cat. The animal appeared close to death. I did not like leaving him to die or killing him myself. I could perceive no discernible reason for his state—there was no visible injury, no gunshot wound, no sign of poison. When we returned home, I contacted the SPCA, but they had no officers on duty. They suggested putting the animal in a box and taking him to the vet, if possible. When I returned, another movement of the animal's head revealed him to be a possum. I put the possum in the box and took him to the vet. At the veterinary clinic, a comment was made: 'There's only one thing we do with possums'. This statement made me wonder what would have happened if only a minor injury had occurred. But I did not mind too much, as I knew he could not be saved. However, a friend later joked, 'other people are trying to kill possums; here you are trying to save them'. Nevertheless, I was certain that leaving a dying animal in the gutter was no way for an animal to die and no way for a human being to act. Another

person commented that the possum was where it should be—in the gutter. This comment reminded me of when I was in Dublin in 2019, passing The Gutter Bookshop. The window displayed a quotation by Oscar Wilde: ‘We are all in the gutter, but some of us are looking up to the stars’. While some people interpret this as an invitation to self-reliance and self-control, there are other interpretations. The possum tried to look up, in our situation, but he needed a hand. Why would not one offer a hand, obviously in this case one adequately gloved?

Now, the above is only a simple example of an attempt to do justice to another animal’s life and to offer a hand. Others are doing far more. I know of some people who look after injured possums. A friend’s son lived on a large property in a converted barn. He shared the house with a possum who had also made his home in the converted barn. Also, when hunters tried to come onto his property to kill deer and wild pigs, he refused their entry or made a noise to warn the animals so that they would flee. While this is not the usual way people act towards animals in New Zealand, many do show acts of kindness towards some nonhuman animals. This is to be commended and encouraged. But how could one help encourage this compassion and expand it to include those nonhuman animals not classified as companion animals, especially when others in the establishment encourage the killing of them?

However, other views exist about our attitude and behaviour toward non-human animals, particularly those labelled ‘pests’ and ‘predators’. This book shows that the hegemonic view of what to do about ‘predators’ that destroy our environment—kill them with 1080—is just one view. There is in this view an ideology of how we should relate to the environment and nonhuman animal life; and how we should respond to problems that arise. Still, we do not need to accept this ideology. Using 1080 is not the only or best way to tackle environmental issues.

Exploring the problem of predators and the use of poison has been a revelation and a humbling experience for me. People like Albert Schweitzer, Deborah Bird Rose, Arian Wallach, Carolyn Merchant, Jamie Steer, Marc Bekoff and Gosia Bryja are some of the many whose writings inspired me in this project. The

thoughtfulness and compassion shown in their writings towards non-human animals is enormous. The writers have confirmed my initial suspicion that poison is not the solution to predator problems, as when first coming upon the discourse of DoC and pro-1080 advocates, their arguments for using 1080 appeared daunting. On closer inspection, however, and with an enormous amount of research inspired by the people mentioned, the arguments for 1080 became weaker and more simplistic.

I am concerned that a pro-1080 stance has become one of the main discourses in conservation in New Zealand (a hegemonic discourse). Finding the various fields of study and people mentioned in this book not given any attention and remaining unknown to the vast majority of New Zealanders is disconcerting. A difficulty exists in believing that the ‘claim-makers’ who constructed the pro-1080 discourse are unfamiliar with the people mentioned in the previous chapters. If that is the case, much ignorance exists. Or do those within the prevailing discourse just avoid mentioning these other voices? If so, much duplicity exists, as these other people speak for the condemned animals and provide a convincing case to condemn the use of poison. It is inexplicable that people like Jamie Steer, Annie Potts; and Wayne Linklater (now living in the USA), who all possess strong opinions on conservation and predators and live or have lived in New Zealand, are not mentioned in discussions of predation. The same goes for Marc Bekoff, Arian Wallach and Chris Thomas, who have all commented on conservation aspects in New Zealand concerning using poison. This neglect must reflect on our education system, our media and how we understand conservation—as only involving instrumental reasoning and technomanagerialist approaches to problems that arise. Also shown is the power of these institutions to control our discourse.

As mentioned, several times, 1080 opponents are demeaned by being called a ‘rabble’ or ‘motley crew’. And while this may be true for some, my reading of the vivisection conflict struck me as being like the 1080 dispute in New Zealand. Most people nowadays believe that performing surgery on animals without adequate anaesthesia is unjustified and cruel. Although the anti-vivisection protestors were a rabble, they were a rabble with a

cause, resisting the cruel dominant discourse of the scientists. They refused to kowtow to the medical establishment's hegemonic discourse regarding vivisection. Such action helped bring about changes in the law.

A similar refusal of some in New Zealand to endorse the establishment's use of 1080 might lead to more humane practices by DoC. Despite being written off and ridiculed, anti-1080 adherents are the ones saying, 'something is rotten in the state of New Zealand'—the rotten flesh of animals who experience suffering and death through ingesting 1080 dropped on New Zealand's killing fields. The authorities do not show the deaths of these animals, so blunting the emotions of ordinary people and curbing any expression of compassion for the suffering endured. That is why apocalyptic language has come about in the anti-1080 discourse: to undermine belief in the instrumental reasoning on which such killing is based.

The typical response to the concern expressed about the suffering of poisoned animals is to ignore it and jump defensively to the suffering of those killed by predators. The question is often asked: Don't prey also possess a right to a life free from being preyed on by rats, stoats, possums, etc? (Hansford, 2016: 172-173). Nevertheless, one does not observe any concern over the birds predated on by the *kārearea* (New Zealand falcon) in people who ask this question. Nor do they complain about the pain inflicted on animals, like chickens, in factory farming. Such a question, then, about the pain of those predated on by the three 'beasts' (an apocalyptic image) that are killing New Zealand's forests can be seen as rhetorical rather than coming from any deep-seated feeling about the animal. And, as news reporter Michael Pollan says of the 'they do it, too' defence, 'do you really want to base your morality on the natural order? Murder and rape are natural, too. Besides, humans don't need to kill other creatures in order to survive; animals do' (Pollan, 2002).

Also, conservationists are not primarily concerned with the suffering of prey but with the loss of species. As far as I know, those ethicists who hold that humans have a duty to do something about wild animal suffering, even when caused by predation, would not countenance the use of a poison that causes

even more suffering.

In the debate on 1080, the dominant aspects seem to revolve around such questions as whether 1080 breaks down quickly, whether the poison kills birds leading to the loss of bird life, whether predators increase soon after the poisoning and whether 1080 causes TB in cattle, etc. Opposing views exist on all these points, even if only held by a minority.

Although these issues are important, I do not attend to them much as a lot has already been written about them. However, the prime reason for not looking at these issues is that the answers to these questions do not dictate whether to use poison. Other matters need examination, as they dictate how people answer the questions mentioned above. Consider, for example, someone who argues that introduced species are invaders who do not belong here, and that the environment should be restored to how it was three hundred or so years ago. A person with this view would then devise methods to get rid of these invaders. And, of course, if you were educated to worship the technological capabilities of the industrial system (which will lead us to the promised land), you would advocate for something like 1080 and spreading the poison by helicopter. Why choose a more nuanced approach to the problem? This would be particularly the case if your philosophy involved putting humans on a pedestal with the right to impose what they proclaim as proper behaviour on animals that also have the earth as their home. And the use of poison would be even more justifiable if we assumed that only human beings possess moral standing and rights or that ethical questions are subjective and do not need to be invoked in the question of poison use.

However, even if predators cause disastrous outcomes for the environment, one can still ask whether this justifies using poison. In Chapter 6, we saw the argument for living beings having certain rights, including not being subjected to unnecessary death by humans. Do animals have a duty not to subject other animals to death? This does not seem to be the case. Do humans have obligations to prevent animals from undergoing such suffering through predation—the question of wild-animal suffering? Some people would agree that they do. They would maintain that wild

animal life is exposed to tremendous suffering from illness, parasites, accidents, inclement weather, insufficient food and predation. Therefore, humans with their abilities have a duty of care to do something about this. However, wild animal suffering is not an issue for the pro-1080 faction in New Zealand society. What is at stake is biodiversity.

Most of the points I bring to the fore, which ground the answer to the question of what we should do about the state of our environment, are discussed in environmental philosophy or the environmental humanities rather than in conservation departments and do not get down to the ordinary person. So, when insights within paradigms are presented as factual assertions, it is difficult for people to find fault in the presentation. This is despite a feeling that something is wrong with the posturing and declarations of the establishment. It is difficult to go against the so-called ‘facts’ of the matter claimed by 1080 proponents. To do so would bring ridicule and a constant restatement of facts in a mantra-like way rather than a rational dialogue. We see some of this language of insult and mantra-like repetition of facts on some Facebook pages.⁴¹

Rats, terrible enough for many people, are thus turned into apocalyptic monsters by the environmental establishment. Anyone who challenges this picture is taken as being outside the conventional belief system, if not a traitor to the cause of a pure green New Zealand (based on poison) or to the millennial idea of returning to a lost paradise. Is this a language of objective science or a political, moral or religious discourse where rats become scapegoats?

What, one may ask, should we do about the loss of native species? Most people regret the loss of native animals. Most conservationists may be sympathetic to using 1080 to counter the potential loss of a species. However, others consider that getting rid of all predators will not work. From this point of view, it would mean spending considerable time and money trying to achieve an unattainable goal. This questioning of an eradication programme is the position of Benfield (2011, 2015), McQueen (2017), Thomas (2018), and Steer and Linklater (2018). These people claim such measures will not work because mainland New

Zealand is not a small island, the current New Zealand environment is not what it once was, and some animals have adapted to the current environment while others have not. Should we then condemn these animals that have not adapted to extinction and allow them to be preyed on? No, that is not what we should do, either. We have a responsibility to care for them.

So, what we first need is an attitudinal change, a move away from mechanistic thinking. This shift would affect not only our perceptions of ‘predators’ but also our attitude towards the whole world and those living in the world. Rather than think of rats and other such beings through the metaphors of war, conquest and invasion, we could think of them, as critical animal scholar Jarzębowska suggests, as ‘ecological adversaries’. Their interests clash with ours. And they also have complex lives of their own with a will-to-live, deserving, like any being, some respect (Jarzębowska, 2018: 15).

Writings on 1080 need to include ethical issues, particularly concentrating on the notion of inherent worth or intrinsic value and what that means in terms of our responsibilities to other beings. The distinction between inherent and instrumental value must be made clear, as conservationists tend to present the use value of something or some being as having instrumental value as what justifies particular behaviour. Without ethical attention, there is a danger of falling back on the values inherited from the past.

In this regard, it was interesting to listen to a panel discussion on animal welfare concerns before New Zealand’s last election (2020). The panel comprised members from each political party in New Zealand. Apart from the Green Party member, all the other participants showed a woeful ignorance about the place of animals in our lives. One speaker started talking about how he had always believed that dogs should not be allowed inside the house until a family member convinced him to try having the family dog inside. Of course, the Green Party member probably accepted the idea of using 1080. But overall, the speakers reminded me of how backwards our attitudes towards others who live on the planet can be. And these were the people who could be responsible for making up and passing legislation on matters

having to do with animals in New Zealand. While legislation in New Zealand was passed in 2015 recognising animals as sentient and accepting that there were welfare concerns of wild animals, it did not include the sentient animals rats, stoats and possums. At present, the Ministry for Primary Industries has regulatory responsibility for animal welfare, but it also has responsibility for the farming, fishing and forestry sectors of primary industries, which seems like a contradiction. We require an independent animal commissioner who will advocate for all sentient beings, not just those they choose to value. We could also learn from Australia, where there is an Animal Justice Party with representatives in state parliament.

After ethical reflection, we must critically reflect on the science underpinning our approach to ‘predators’. Continuing what we have always done will not give us answers to conservation problems. It will not help us develop the compassion needed to think outside the square of our long-held mechanistic solutions and find new answers to problems based on justice and the knowledge of animals as sentient beings or as having a right to life.

But still, as mentioned in Chapter 6, we are left with a problem, a conflict of interests, where the loss of native birds contributes to a more extensive loss of biodiversity that is likely to have a devastating effect on the environment and eventually all living beings, according to some scientists. Now, this must be put into context. Considering the nature of biodiversity, we have seen how current hegemonic paradigms such as conservation biology and invasion biology may be skewing our view of the significance of biodiversity loss. We need more information about the consequences of the loss of specific species. And of particular concern is an even more significant problem than the loss of biodiversity by predators: the loss caused by humans. What are we going to do about that?

Establishing protected areas, whether on the mainland or elsewhere, where the birds can thrive is one option for fulfilling our responsibility to help endangered species. Another possibility is to use new technologies and so-called ‘paradise engineering’ to create the environment that people, or more precisely a group of

people, want. DoC itself takes up such a position in its use of 1080. However, theirs is a rather crude, unsophisticated mechanistic solution, emanating more from an idea of hell than the idea of paradise. Chris Thomas (2018) and David Pearce (1995, 2009) are two people who take up extreme views of paradise engineering. Those in welfare biology concerned with wild animal suffering would also support new technologies to stop predators from breeding or help predators evolve to the point where they would no longer be predators (see ‘Why wild animal suffering matters’-Animal Ethics, 2016). While this may seem extreme, cruelty is not part of their response to predation, as in DoC’s approach—see ‘Painlessly killing Predators’ (Bramble, 2020). However, one should be a little suspicious of some of these ideas. To me, they reek of hubris and ‘measureless might’, as shown in the Biblical narrative of the Tower of Babel. Some, such as McQueen, Benfield and even Thomas, advocate for less involvement by humans, leaving things alone and letting them play out by themselves to some extent.

As mentioned in the introduction, I do not hold the idea that we should dominate and destroy other animals, but also, we do not need to allow them to dominate us. As I have mentioned, the situation may be more like one of self-defence. Stopping this domination may regrettably involve killing. Some would disagree. I am open to persuasion. However, the way we go about this killing is important. While I do not value hunting as a method of dealing with the problems of possums, it would be a better answer than 1080 use, at least for possums (see Appendix). It would give some value to the lives of those killed and not just leave them exposed, dying on the ground. An even better way would be the use of quick-acting traps, especially for rats and stoats. If we are going to kill animals anyway, which is morally questionable, then the least amount of suffering possible is preferable. However, the danger of hunting and setting traps is that these methods become just as much industries based on exploitation and channelling the death drive into mastering the world and killing non-human beings as poisoning. Predators should be controlled up to the point of preventing a massive loss of prey species, rather than a total eradication.

Using immunocontraception and genetic modification may be the best response to the problem. This approach distances itself from both the suffering caused by 1080 and that caused by hunting. However, one must be careful of the dangers mentioned before, hubris and grandiose paradise re-engineering. Also, such a response could be understood as a technofix, which I have inveighed against throughout the book. But the difference from poisoning is that regard would be given to animals' subjectivity, their capacity to suffer and their rights to life once born. That the method is mechanistic is a secondary consideration in this case. It was very encouraging, then, to come across a news article as I prepared this text for publishing about a researcher working on a paste that sterilises predators and making the point that such a method would be more humane than poisoning (Guesgen, 2021). I understand that the conservation department is not putting much energy into investigating these methods and that the Green Party does not encourage it either. If that is so and they continue to expand the use of 1080, this is indefensible. We have a moral mandate to find less harmful ways of tackling the issue, even if there is a slight risk to humans.

To conclude, we come back to the overriding importance of compassion and the cultivation of this virtue. We find this value in many cultures around the world. Can we not say with Schweitzer that compassion makes a person more human, more than any other ability—to speak, use tools, etc? Compassion has an importance and value more than practical instrumental rationality. So, suppose we cultivate this virtue. In that case, we can become more human and, paradoxically, more animal, enabling us to coexist with non-human animals in a 'community of beings', in the place that is home for all of us—the earth. If we, as humans, can help non-human beings, why wouldn't we? This is especially so, given our abysmal record in looking after this world and exploiting every niche we can, pronouncing ourselves 'masters and possessors of nature' (Descartes) and causing 'the fear and dread of you [humans]' by 'every animal on earth' (Gen 9: 2).

References

- Abram, David. 1997. *The Spell of the Sensuous: Perception and language on a more-than-human-world*. New York: Penguin, Random House.
- Acampara, Ralph R. 2006. *Corporal Compassion: Animal Ethics and Philosophy*. Pittsburgh: University of Pittsburgh Press.
- Achenbach, Joel. 2019. 'Two Mass Killings a World apart share a Common Theme: Ecofascism' *The Washington Post-Science*, 18 August.
- Alley, Maurice R., and Ngaio Beausoleil. 2016. 'Predator-Free New Zealand: Welfare Considerations and Collateral Damage to Non-Target Species'. *Kokako*, 23, 2: 15-22.
- Amos, Jonathan. 2015. 'Humans are unique super-predator'. *BBC News-Science and Environment*: <https://www.bbc.com/news/science-environment-34011026>
- Anderson, Atholl. 'Impacts of the Māori on the Environment. Envirohistory New Zealand'. 15 December: <https://envirohistorynz.com/2009/12/15/impacts-of-the-maori-on-the-environment/>
- Animal Ethics. n.d. 'Why wild animal suffering matters'. Accessed 20 October, 2023: <https://www.animal-ethics.org/wild-animal-suffering-section/wild-animal-suffering-matters/>
- Anthes, Emily. 2017. 'The Vivisectionist and Frankenstein'. *Slate*, 18 January: <https://slate.Com/technology/2017/01/experimental-animals-frankenstein-and-the-19th-century-debates-about-scientific-ethics.html>
- Armstrong, John, M. 2004. 'After the Ascent: Plato on Becoming like God'. Vol. 26, in *Oxford Studies in Ancient Philosophy*, edited by David Sedley, 176-183. Oxford: Oxford University Press.
- Ayer, Alfred. J. 1936. *Language, Truth, and Logic*. London: Victor Gollancz.
- Barnard, Helen. 2006. *Nature, Human Nature and Value: A Study in Environmental Philosophy*. PhD. Cardiff: Cardiff University.

- Batavia, C.; M.P. Nelson; J.T. Bruskotter; M.S. Jones; E. Yanco; D. Ramp; M. Bekoff and A.D. Wallach. 2021. 'Emotion as a source of moral understanding in conservation'. *Conservation Biology*, 1380-1387.
- Bates, A. W. A. 2017. *Anti-vivisection and the Profession of Medicine in Britain: A Social History*. Palgrave MacMillan.
- Beausoleil, Ngaio, J. 2020. 'I Am a Compassionate Conservation Welfare Scientist: Considering the Theoretical and Practical Differences Between Compassionate Conservation and Conservation Welfare'. *Animals* 10 (2): 257.
- Bekoff, Marc. 2000. 'Animal Emotions: Exploring Passionate Natures: Current interdisciplinary research provides compelling evidence that many animals experience such emotions as joy, fear, love, despair, and grief—we are not alone'. *BioScience* 50 (10): 861-870.
- 2013. *Ignoring Nature No More: The Case for Compassionate Conservation*. Chicago and London: The University of Chicago Press.
- 2017. 'Long-Term Effects of Violence towards Animals by Youngsters'. *Psychology Today*, 9 July: [https:// www. psychologytoday.com/us/blog/animal-emotions/201707 / long -term-effects-violence-toward-animals-youngsters](https://www.psychologytoday.com/us/blog/animal-emotions/201707/long-term-effects-violence-toward-animals-youngsters)
- 2017. 'Scapegoating Possums: Iffy Science, Demonizing Psychology, and Fiery Words of War'. *Huffpost*, 11 July: [https://www.huffpost.com/entry/scapegoating-possums -iffy-science-demonizing-psychology_b_59653e60e4b0dea b7c646c72](https://www.huffpost.com/entry/scapegoating-possums-iffy-science-demonizing-psychology_b_59653e60e4b0dea b7c646c72)
- 2017. 'New Zealand's "Possum Stomp" vs. Compassionate Conservation, Individual Well-Being, and Ethics'. *HuffPost*, 22 October: [https://www.huffpost.com /entry/new-zealands-possum-stomp-vs-compassion ate-conservation_b_59eca812e4b034105edd4f83](https://www.huffpost.com/entry/new-zealands-possum-stomp-vs-compassionate-conservation_b_59eca812e4b034105edd4f83)
- 2018. 'The it's ok to kill animals humanely, apology doesn't work'. *Psychology Today*, 23 December: <https://www. psy- chologytoday.com/nz/blog/animal-emotions/201812/ the-its-ok-kill-animals-humanely->

- apology-doesn't-work
- . 2019. 'Accusations of "Invasive Species Denialism" are Flawed'. *Psychology Today*, 18 February: <https://www.psychologytoday.com/nz/blog/animal-emotions/201902/accusations-invasive-species-denialism-are-flawed>
- . 2019. 'Just Preservation Favors the Intrinsic Value of Animals'. *Psychology Today*, 18 January. <https://www.psychologytoday.com/nz/blog/animal-emotions1901/just-preservation-favors-the-intrinsic-value-animals>
- . 2019. 'New Zealand Continues to Have Major Animal Welfare Issues'. *Psychology Today*. 30 March: <https://www.psychologytoday.com/nz/blog/animal-emotions/201903/new-zealand-continues-have-major-animal-welfare-issues>
- . 2020. 'Jane Goodall Says Don't Use 1080, Jan Wright Says Use More'. *Psychology Today*, 25 January: <https://www.psychologytoday.com/nz/blog/animal-emotions/202001/jane-goodall-says-dont-use-1080-jan-wright-says-use-more>
- Benfield, William. 2011. *The Third Wave: Poisoning the Land*. Wellington: Tross Publication.
- . 2015. *At War with Nature - Corporate Conservation and the Industry of Extinction*. Martinborough: Kindle edition.
- Bentham, Jonathan. 1789. 'An Introduction to the Principles of Morals and Legislation': <http://www.koeblergerhard.de/Fontes/BenthamJeremyMoralsandLegislation1789.pdf>
- Bernard, Claude. (1865) 1927. *An Introduction to the Study of Experimental Medicine*. First English translation by Henry Copley Greene. New York: Macmillan & Co. Ltd.
- Berry, Thomas. 1993. 'The Viable Human'. *Revision*, 16(2).
- Bevan, Darren. 2023. 'Ricky Gervais mocks New Zealand's cat killing competition as world reacts to news of the proposed feral cull'. Newshub, 20 April: <https://www.newshub.co.nz/home/entertainment/2023/04/ricky-gervais-mocks-new-zealand-s-cat-killing-competition-as-world-reacts-to-news-of-the-proposed-feral-cull.html>
- Boks, Ed. 2019. 'Traditional conservation science is a pathological

- disorder?' *Sentient Media*: <https://sentientmedia.org/traditional-conservation-science-pathological-disorder/>
- Boltovskoy, Demetrio, Francisco Sylvester and Esteban Paducci. 2018. 'Invasive species denialism: Sorting out facts, beliefs, and definitions'. *Ecology and Evolution* 8(6): 11190-11198.
- Boyle, Gregory. 2010. *Tattoos in the heart: The power of Boundless Compassion*. New York: Free Press.
- Bramble, Ben. 2020. 'Painlessly Killing Predators'. *Journal of Applied Philosophy* Vol 28, 2: 217-225.
- Brophy, Brigid, Antonia. 1965. 'The Rights of Animals'. *The Sunday Times: London*, 10 October.
- Brown Dog Affair. n.d. Accessed August 9, 2019: https://en.wikipedia.org/wiki/Brown_Dog_affair
- Brown, Lori. 2017. 'Becoming Animal in the Flesh: Expanding the Ethical Reach of Deleuze and Guattari's 'Tenth Plateau''. *PhaenEx Journal of Existential and Phenomenology Theory and Culture* 2: 2: 260-278.
- Browning, Heather and Walter Veit. 2022. 'The Sentience Shift in Animal Research'. *The New Bioethics* 28: 299-314.
- Brownlie, Kaysha and Molly Swift. 2023 'Canterbury competition removes kids' feral cat hunt after backlash from animal rights groups, fears pets could be killed'. *Newshub* 18 April: <https://www.newshub.co.nz/home/new-zealand/2023/04/safe-slams-junior-cat-killing-competition-in-north-canterbury-warns-pets-could-be-killed.html>
- Bryja, Gosia. 2016. 'Discarding euphemisms: the fate of animals deserves truthful words'. *Medium*, April 18: <https://medium.com/@gbryja/discarding-euphemisms-the-fate-of-animals-deserves-truthful-words-b0de83ed7dae>
- 2016. 'Life is looking back at us: when debating the grizzly trophy hunt, ethics cannot be dismissed'. *Medium*, 30 November: <https://gbryja.medium.com/life-is-looking-back-at-us-when-debating-the-grizzly-trophy-hunt-ethics-cannot-be-dismissed-6101d5ff>
- 2019. 'Wildlife Management: When Forest Wails and Mourns'. *Medium*, 24 September: <https://gbryja.medium>

- .com/wildlife-management-when-forest-wails-and-mourn
s-509df9dc766
- 2021. 'Walled by Fear'. *Omere: Humans and Nature: Changing the Paradigm*, 11 July: <https://omere.ca/essays/walled-by-fear/>
- 2021. 'Review: Talking With Bears celebrates Charlie Russell's life'. *Omere: Humans and Nature: Changing the Paradigm*, 1 August: <https://omere.ca/reviews/book-review-talking-with-bears-conversations-with-charlie-russell/?fbclid=IwAR0Xkzf6IdrNXxkcyu>
- 2021. 'Sharing Space with Wildlife Demands Ethics'. *Medium*, 18 December: <https://gbryja.medium.com/sharing-space-with-wildlife-demands-ethics-69e80ce8ee>
- 2023. 'Language and the Knife: Silencing Nature'. *Medium* 1 April: <https://gbryja.medium.com/language-and-the-knife-silencing-nature-5ac36a2378cf>
- Buber, Martin. (1923). 1970. *I and Thou. A Translation with a Prologue 'I and You' and Notes by Walter Kaufmann*. New York: Charles Scribner's Sons.
- Bull, Graham. 2015. *Madness or Transcendence: A Psychoanalytic Account of Chinese Tang-ki Spirit-Medium Healing*. Wellington: The Wayfarer's Retreat.
- Byrom, Angela. 2018. 'Why New Zealand needs alternatives to 1080'. *National Science Challenges, Opinion Pieces*, October: <https://bioheritage.nz/alternatives-to-1080/>
- Callicott, J. Baird. 1980. 'Animal Liberation: A Triangular Affair'. *Environmental Ethics*, 322-338.
- 1990. 'Environmental Ethics'. *The Case against Moral Pluralism*, 2, 2 ed.: 99-124.
- Campbell, Alison. 2018. 'Science and 1080'. *University of Waikato blog*: <https://www.waikato.ac.nz/news-pinion/media/2018/science-and-1080>
- Carter, Mandy. 2016. 'Help Stop the Use of Harmful Poison Meant for Possums That's Killing Other Animals'. *One Green Planet*: <https://www.onegreenplanet.org/animals-and-nature/stop-use-of-harmful-poison-used-to-kill-possums/>
- Centre for Compassionate Conservation. n.d. *What is*

- Compassionate Conservation*. Accessed October 2, 2020: <https://www.uts.edu.au/research-and-teaching/our-research/centre-compassionate-conservation/about-us/what-compassionate-conservation>
- Chang, Hasok. 2004. *Inventing Temperature: Measurement and Scientific Progress*. Oxford: Oxford University Press.
- Chelsey, Kate. 2018. 'How Apocalyptic Language in Politics Messes with our Morals - Interview with Alison McQueen'. *Futurity*, (3 January).
- Choi, Young, D. 2007. 'Restoration Ecology to the Future: Call for a New Paradigm'. *Restoration Ecology*, 15: 351-343.
- Chrysostom, John. 1986. *Homilies on Genesis 1-17. Translated by Robert C. Hill*. Washington DC: The Catholic University of America.
- Clifton, Merritt. 2017. 'Tom Regan, 78, made the case for animal rights'. *Animals* 24,7: <https://www.animals24-7.org/> / 2017 /02 /18/tom-regan-78-made-the-case-for-animal-rights
- Coase, Ronald, H. 1985. 'The New Institutional Economics'. *American Economic Review*, 88: 72-74.
- Coates, Peter. 1998. *Nature: Western Attitudes since Ancient Times*. Cambridge: Polity Press.
- 2006. *American Perceptions of Immigrants and Invasive Species*. Berkeley, California: University of California Press.
- Cochrane, Alasdair. n.d. 'Environmental Ethics'. *Internet Encyclopedia of Philosophy*. Accessed March 2020: <https://iep.utm.edu/envi-eth/>
- Cockburn, Henry. 2018. 'Black Death was caused by humans, not rats, says study'. *The Independent*. 16 January: <https://www.independent.co.uk/news/science/black-death-what-cause-humans-rats-fleas-deaths-bubonic-plague-a8162006.html>
- Coghlan, Andy. 2009. 'In search of the perfect mouse trap'. *NewScientist, Newsletters*: <https://www.newscientist.com/article/dn1759-in-search-of-the-perfect-mouse-trap/#ixzz6aGow3VVb>
- Colbert, Elizabeth. 2015. 'The Big Kill: New Zealand's Crusade to Rid itself of Mammals'. *The New Yorker*: <https://www>

- .newyorker.com/magazine/2014/12/22/big-kill
- Coleman, William. 1977. *Biology in the Nineteenth Century: Problems of Form, Function and Transformation*. Cambridge: Cambridge University Press.
- Collis, Ashleigh. 2013. 'Heart for the helpless'. *Horowhenua Chronicle*: <https://www.nzherald.co.nz/horowhenua-chronicle/news/heart-for-the-helpless/6G2VK5Z3KNYJ5VU3HVBQRHSECA/>
- Conservation: Sense and Nonsense. 2012. 'The Sparrow Wars: America's First Invasive Species': <https://milliontrees.me/2012/05/08/the-sparrow-wars-americas-first-invasive-species/>
- Crichton, Michael. 2010. 'Environmentalism as Religion'. *The New Atlantis* 28: 61-74.
- Crist, Eileen. 1999. *Images of Animals: Anthropomorphism and Animal Mind*. Philadelphia: Temple University Press.
- Crowley, Sarah, Steve Hinchliffe, Steve Redpath & Robbie McDonald. 2017. 'Disagreement about Invasive Species Does Not Equate to Denialism: A Response to Russell and Blackburn.' *Trends in Ecology & Evolution* 32(4): 228-229.
- Crystal, Jonathan D., and Allison L., Foote. 2007. 'Metacognition in the Rat'. *Current Biology* 17, 6: 551-555.
- Daly, Michael. 2019. 'Fact checking the SPCA's anti-1080 stance'. *Stuff*, 8 Jan.: <https://www.stuff.co.nz/national/109802925/fact-checking-the-spcas-anti1080-stance>
- Daly, Michael. 2019. 'How do we know predators kill 25 million birds, chicks, and eggs each year'. *Stuff*, 10 January: <https://www.stuff.co.nz/science/109855658/how-do-we-know-predators-kill-25-million-birds-chicks-and-eggs-each-year>
- Davies. Anna, R. 2020. 'Environmentalism'. In *International Encyclopedia of Human Geography* (Second Edition), by Audrey Kobayashi, 259-264. Elsevier.
- Davis, Mark. 2006. 'Invasion Biology, 1958-2005: the pursuit of science and conservation'. In *Conceptual Ecology and Invasion Biology: Reciprocal Approaches to Nature*, by McMahon & T.

- Fukami Marc Cadotte, 35-64. Dordrecht: Springer.
- 2009. *Invasion Biology*. Oxford: Oxford University Press.
- 2011. 'Don't Judge Species on their Origins'. *Nature*, 474: 153-154.
- Davis Mark, A., and Chew M. K. 2017. "The denialists are coming! Well, not exactly: a response to Russell and Blackburn'. *Trends in Ecology & Evolution* 32 (4), 229-230.
- Deleuze, Gilles; and Félix Guattari. 1987. *Kafka: Toward a Minor Literature*, tr. Dana Polan." Minneapolis: University of Minnesota Press.
- 1987. *A Thousand Plateaus: Capitalism and Schizophrenia*. London, NY: Continuum.
- De Sousa, Ronald. 1987. *The Rationality of Emotion*. Massachusetts: The MIT Press.
- DeMello, Margo. 2012. *Animals and society: An introduction to human-animal studies*. New York: Columbia University Press.
- Despret, Vinciane. 2005. 'Sheep do have Opinions'. In *Making Things Public: Atmospheres of Democracy*, by Bruno Latour and Peter Weibel, 60-370. Cambridge USA: MIT Press.
- Despret, Vincianne. 2008. 'The Becomings of Subjectivity in Animal Worlds'. *Subjectivity* 23: 123-139.
- Despret, Vincianne. 2009. 'Thinking. Like a Rat'. *Angelaki, Journal of the Theoretical Humanities* 20 (2): 121-134.
- DoC. n.d. 'Moving Towards Predator Free 2020-2050'. Accessed December 1, 2020: <https://www.DoC.govt.nz/nature/pests-and-threats/predator-free-2050/moving-towards-predator-free-2020-to-205>
- DoC. n.d. 'Science supports using 1080'. Accessed December 16, 2020: <https://www.DoC.govt.nz/nature/pests-and-threats/methods-of-control/1080/science-supportsusing1080/#:~:text=Environment%20agencies,%2C%20bats%2C%20insects%20and%20lizards>
- DoC. n.d. 'War on Weeds (Brochure)'. Accessed October 1, 2017. <https://www.beehive.govt.nz/sites/default/files/War-on-Weeds.pdf>
- Donnell, Hayden. 2018. 'Separating fact from fiction in the 1080

- debate'. *Spinoff*: <https://thespinoff.co.nz/society/18-09-2018/separating-fact-from-fiction-in-the-1080-debate/>
- Douglas, Mary. 1970. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London: Pelican Books.
- Dubos, René. 2006. 'Franciscan Conservation versus Benedictine Stewardship'. In *Environmental Stewardship: Critical Perspectives, Past and Present*, by Berry. London, New York: T & T Clark.
- Duell, Mark. 2015. 'I wanted to give him love: Extraordinary moment animal rights activist jumped into a ring to confront matadors'. *Daily Mail-Australia*: <https://www.dailymail.co.uk/news/article-3205597/Animal-rights-activist-jumped-bull-ring>
- Duncan Ian. J. H. 2019. 'Animal Welfare: A Brief History'. In (Eds), *Animal Welfare: From Science to Law* By Hild S. & Schweitzer L, 13-19. Paris: La Fondation Droit Animal, Éthique et Sciences (LFDA).
- Eason, Charles, T., Lee Shapiro, Shaun Ogilvie, Carolyn King & Mick Clout. 2017. 'Trends in the development of mammalian pest control technology in New Zealand'. *New Zealand Journal of Zoology* 44 (4): 267-304.
- Edgar's Mission Farm Sanctuary. n.d. (Accessed December 1, 2020). *Edgar's Mission*. 'Welcome Stranger': <https://edgarsmission.org.au/emtv/welcome-stranger/>
- Edmonds, Richard. 1994. *Patterns of China's Lost Harmony: A survey of the country's environmental degradation and protection*. London: Routledge.
- Ehrlich, Paul R. 1969. *The Population Bomb*. New York: A Sierra Club Ballantine Book.
- Eliot, George. (1871) 2000. *Middlemarch*. Ware: Wordsworth Editions Ltd.
- Elton, C. S. 1958. *The Ecology of Invasions by Animals and Plants*. London: Methuen.
- Evelyn, John. (1662) 2017. *Silva: Or a Discourse of Forest-Trees, and the Propagation of Timber in His Majesty's Dominions, as It Was Delivered in the Royal Society, on the 15th of October 1662*. Miami: Hard Press.

- Fenwick, Rob. 2017. 'Predator-free movement uniting communities and organisations'. *Stuff*, 5 December: <https://www.stuff.co.nz/environment/99443957/predatorfree-movement-uniting-communities-and-organisations>
- n.d. *Vision for a Predator Free NZ 2050-NEXT Foundation*. Vineo. Accessed October 9, 2018: <https://vimeo.com/275960010>
- Feyerabend, Paul. [1975] 1978. *Against Method*. London: Verso.
- Fideler, David. 2014. *Restoring the Soul of the World: Our Living Bond with Nature's Intelligence*. Rochester: Vermont: Inner Traditions.
- Field, Thalia. 2016. *Experimental Animals (A Reality Fiction)*. New York: Solid Objects.
- Fine, Gary, Alan and Lazaros Christoforides. 1991. 'Dirty Birds, Filthy Immigrants and the English Sparrow War: Metaphorical Linkage in Constructing Social Problems'. *Symbolic Interaction*, 14 (4): 375-393.
- Florek, Stan. 2014. 'Capitalism, Cities and the Theory of Evolution'. *Australian Museum*: <https://australian-museum/blog-archive/science/capitalism-cities-and-the-theory-of-evolution>
- Forest and Bird. 2018. 'Fact Sheets & FAQ': <https://www.forestandbird.org.nz/resources/frequently-asked-questions-about-1080>
- Francis, Pope. 2015. *Laudato Si-On Care of our Common Home*. Vatican City.
- Gamboa, John. n.d. 'About the Book'. *Environmental Progress*. Accessed August 4, 2020: <https://environmentalprogress.org/praise-for-apocalypse-never>
- Garreau, Joe. 2010. 'Environmentalism as Religion'. *The New Atlantis*: <https://www.thenewatlantis.com/publications/environmentalism-as-religion>
- Gasman. 1971. *The Scientific Origins of Social Darwinism*. New York: Peter Lang.
- Gasman, Daniel. 1998. *Haeckel's Monism and the Birth of Fascist Ideology*. New York: Peter Lang Publishing.

- Gleick, Peter, H. 2020. 'Book review: Bad science and bad arguments abound in Apocalypse Never by Michael Shellenberger'. *Yale Climate Connections*: <https://yaleclimateconnections.org/2020/07/review-bad-science-and-bad-arguments-abound-in-apocalypse-never/>
- Glen, Frank. 2018. 'The fourth estate at war: New Zealand's press during the Taranaki War, 1860-61'. In *Tutu Te Puehu: New Perspectives on the New Zealand Wars*, by John Crawford and Ian McGibbon. Wellington, Aotearoa, New Zealand: Steele Roberts Aotearoa.
- Gordon, John-Stewart. 2012. n.d. 'Bioethics' In *Internet Encyclopedia of Philosophy*. Accessed November 2022: <http://www.iep.utm.edu/bioethic/>
- Gordon, Rebecca. 2018. 'Psychologists are Standing Up Against Torture at Gitmo: Sometimes the Good Guys do win'. *The Nation*: <https://www.thenation.com/article/archive/psychologists-are-standing-up-against-torture-at-gitmo/>
- Gould, Stephen. 1977. *Ontogeny and Phylogeny*. Harvard: Harvard University Press.
- Griffin, Andrea S., Alex Callen, Kaya Klop-Toker, Robert J Scanlon, Matt W. Hayward. 2020. 'Compassionate Conservation Clashes With Conservation Biology: Should Empathy, Compassion, and Deontological Moral Principles Drive Conservation Practice?' *Front. Psychol* 11: 1139.
- Gröning, Gert and Joachim Wolschke-Bulmah. 2010. 'The Myth of Plant-Invaded Gardens and Landscapes'. *Etudes Rurales* 197-218.
- Gruffudd, Pyrs. 2011. 'On the Prowl with the Possum Posse: Nature and Nation in Aotearoa/New Zealand'. In *Human and Other Animals*, by Bob Carter and Nickie Charles, 271-235. London: Palgrave Macmillan.
- Gudsell, Kate. 2016. 'Poison Plan for Biblical Plague of Rats'. RNZ, 7 May: <https://www.rnz.co.nz/news/national/303290/poison-plan-for-biblical-plague-of-rats>
- Guesgen, Mirjam. 2021. 'New tactics against predators and pests promise to be more effective and humane'. *The Spinoff*

- (*Science Content*), 9 September: https://thespinoff.co.nz/science/09-09-2021/new-tactics-against-predators-and-pests-promise-to-be-more-effective-and-humane?fbclid=IwAR3BMMDZcutvj6mf2AJVtvX8TG_KN-hDDy7SjiG4qI8xSt1Chaz1q1Lnq0&=
- Hansford, Dave. 2009. 'Opinion-1080'. *NZ Geographic: Science and Environment* May-June, 097: Hansford, Dave. Issue 097: <https://www.nzgeo.com/stories/1080/>
- 2016. *Protecting Paradise: 1080 and the Fight to Save New Zealand's Wildlife*. Nelson: Potton & Burton.
- Harcourt-Smith, Joanna. n.d. 'Living Nature, the Western Tradition, and Restoring the Soul of the World': David Fideler in conversation with Joanna Harcourt-Smith about his recent book, *Restoring the Soul of the World: Our Living Bond with Nature's Intelligence. The Cosmopolis Project, Vermont*. Accessed October 9, 2020: <https://www.cosmopolis-project.org/living-nature-western-tradition-world-soul/>
- Harrison, Peter. 1999. 'Subduing the Earth: Genesis 1, Early Modern Science and the Exploitation of Nature'. *The Journal of Religion*, 79 (1): 86-109.
- 2007. *The Fall of Man and the Foundations of Science*. Cambridge: Cambridge University Press.
- Harrison, Ruth. 1964. *Animal Machines*. London: Vincent Stuart Publishers.
- Harvie, Will. 2017. 'National Portrait: 1080 author Dave Hansford'. *Stuff*, 27 May: <https://www.stuff.co.nz/the-press/news/92620150/national-portrait-1080-author-dave-hansford>
- Hayward, M. W.; A. Callen; B. L. Allen, G. Ballard; F. Broekhuis; C. Bugir, et al. 2019. 'Deconstructing Compassionate Conservation'. *Conservation Biology* 33 (4): 760-768.
- Heffernan, Teresa. 2015. 'The Post-Apocalyptic Imaginary: Science, Fiction, and the Death Drive'. *English Studies in Africa* 58 (2): 66-79.
- Heeringa, Sarah. 2023. 'Killer cat facts we can't talk about – and why that needs to change', *Stuff*: <https://www.stuff.co>.

- nz/environment/climate-news/131858466/killer-cat-facts-we-cant-talk-about--and-why-that-needs-to-change
- Hitchcock, Christopher. 2004. *Contemporary Debates in Philosophy of Science*. Malden, MA: Blackwell Publishing.
- Hollis, Martin. 2002. *Philosophy of Social Science-Revised and Updated*. Cambridge: Cambridge University Press.
- Holm, Nicholas. 2015. 'Consider the Possum: Foes, Anti-Animals, and Colonists in Paradise'. *Animal Studies Journal* 4 (1): 32-56.
- Horowhenua Mail. 2019. 'Fighting against foreign invaders: Join the campaign to wipe out German and common wasps': 39.
- Howard, Jennifer. 2009. 'Creature Consciousness: Animal studies tests the boundary between human and animal—and between academic and advocate'. *The Chronicle of Higher Education*: <https://faunalytics.org/wp-content/uploads/2015/05/Citation1204.pdf>
- Howell, Nancy. 2008. 'Relations Between Homo Sapiens and Other Animals: Scientific and Religious Arguments'. In *The Oxford Handbook of Religion and Science*, by Philip Clayton. Oxford: Oxford University Press.
- Huang, Tsung-Huei. 2009. 'Anthropomorphism or Becoming-animal? Liu Ka-shiang's 'Hill of Stray Dogs as a Case in Point'. *Transtext(e)s Transcultures*, 跨文本跨文化, 9: <http://journals.openedition.org/transtexts/279>
- Hughes, J. Donald. 1985. 'Theophrastus as Ecologist'. *Environmental History Review* 9 (4): 296-306.
- Inglis, Meera. 2016. *Killing for Conservation: The Ethics of life and death in Conservation Policy*. PhD Thesis. Sheffield: University of Sheffield.
- Inston, Kevin. 2019. 'The Human–Animal Relation in Rousseau's Dis- course on Inequality'. *Paragraph* 42 (1): 37-53.
- Jahr, Fritz. (1927) 2005. 'Bio-Ethics: Bioethics A panorama of the human being's ethical relations with animals and plants by Fritz Jahr'. Translated by José Roberto Goldim/2005. Stuttgart Nr. 24. *Kosmos, Gesellschaft der Naturfreunde*, (24): <https://www.ufrgs.br/bioetica/jahr-eng.pdf>

- Jarman, M. L. 2007. '1080: Its Chemistry, and the role of Micro-organisms in its breakdown'. *1080science*: [https:// 1080science.co.nz/1080-chemistry/#:~:text=There%20is%20no%20natural%20form%20of%20manufactured%201080%20\(sod](https://1080science.co.nz/1080-chemistry/#:~:text=There%20is%20no%20natural%20form%20of%20manufactured%201080%20(sod)
- Jarzębowska, Gabriela. 2018. 'Follow the Rat. From Necropolitics to A Theory of Interspecies Cohabitation'. *Journal for Critical Animal Studies* 15 (3).
- Jerolmack, Colin. 2008. 'How Pigeons became Rats: the Cultural-Spatial Logic of Problem Animals'. *Social Problems* 55 (1): 72-94.
- Joerstad, Mari. 2016. *The Hebrew Bible and Environmental Ethics: Humans, Nonhumans, and the Living Landscape*. PhD. Durham, North Carolina: Duke University.
- Johnson, P.J.; V. M. Adams, D.P. Armstrong, S.E. Baker, D. Biggs, L. Cotterill; A. Dale; E. O'Donnell; H. Douglas; D.J.T. Boitani; E. Droge, et al. n.d. 'Consequences Matter: Compassion in Conservation Means Caring for Individuals, Populations and Species'. *Animals* (12): 1115.
- Kant, Immanuel. (1993) [1785]. *Groundwork of the Metaphysic of Morals*. Translated by Ellington, James W. (3rd ed.).
- Kapembwa, Julius. 2017. *Wildlife Rights and Human Obligations*, PhD. Reading: University of Reading.
- Kareiva, Peter and Michelle Marvier. 2012. 'What is Conservation Science?' *BioScience* 62 (11): 962-969.
- Keim, Brandon. 2015. 'The Intriguing New Science That Could Change Your Mind About Rats'. *Wired*: <https://www.wired.com/2015/01/reconsider-the-rat/>
- Keller, Catherine Keller and John J. Thatamanil. 2020. 'Is this an Apocalypse? We certainly hope so – you should too'. *ABC Religion and Ethics*: <https://www.abc.net.au/religion/catherine-keller-and-john-thatamanil-why-we-hope-this-is-an-apo/12151922>
- Kelly, Les. 2020. *Duped! The True Story of Predator Free New Zealand*. Palmerston North: AM Publishers.
- Kerridge, Bob. 2018. 'Opinion: Weapons of mass destruction being used in war against pests in Aotearoa'. *Newshub*, 5 September: <https://www.newshub.co.nz/home/new->

- zea-land/2018/09/weapons-of-mass-destruction-in-aotearoa- html
- Kiel, Micah. 2017. *Apocalyptic Ecology: The book of Revelation, the Earth, and the Future*. Collegeville: Minnesota: Liturgical Press.
- King, Amy M. (1789). 'Publication of Gilbert White's 'The Natural History of Selborne''. In *BRANCH: Britain, Representation and Nineteenth-Century History*, by Ed. Dino Franco Felluga. Extension of Romanticism and Victorianism on the Net. Accessed November 20, 2022.
- King, Carolyn. 1984. *Immigrant Killers: Introduced Predators and the Conservation of Birds in New Zealand*. Auckland: Oxford University Press.
- Kirsner, Douglas. 2013. 'Human too Human: An Interview with R.D. Laing'. *Psychoanalytic Review* 100 (2): 361-72.
- Klein, David. 2019. *The Making of an Ecologist: My Career in Alaska Wildlife Management and Conservation*. Fairbank: Fairbank University of Alaska Press.
- Kohn, Eduardo. 2007. 'How dogs dream: Amazonian Natures and the Politics of Transspecies Engagement'. *American Ethnologist* 34 (1): 3-24.
- . 2013. *How Forests Think: Toward an Anthropology, Beyond the Human*. Berkeley and Los Angeles: University of California Press.
- Konnikova, Maria. 2015. 'Trying to Cure Depression, But Inspiring Torture'. *New Yorker*, 14 January: <https://www.new-yorker.com/science/maria-konnikova/theory-psychology-justified-torture>
- Kopnina, Helen. 2017. 'Beyond multispecies ethnography: Engaging with violence and animal rights in anthropology'. *Critical Anthropology* 37 (3): 333–357.
- Kriel, Pieter. 2015. *Onward to Victory: The Message of the Book of Revelation for Today's Christians*. Partridge Publishing Africa.
- Kuhn, Thomas. 1962. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.
- Kureethadam, Joshtrom, Isaac. 2017. *The Philosophical Roots of the Ecological Crisis: Descartes and the Modern Worldview*. Cam-

- bridge: Cambridge Scholars Publishing.
- Latour, Bruno and Seve Woolgar. 1986. *Laboratory Life: The Construction of Scientific Facts*. Princeton. New Jersey: Princeton University Press.
- Lauzon, Minnie A.M. 2017. *Philosophers on the fringe: Albert Schweitzer, Liberty Hyde Bailey, Aldo Leopold, and the wrongful polarization of environmentalist history*. Master's Thesis. Vol. 20: [https:// digitalcommons.cortland.edu/theses/20](https://digitalcommons.cortland.edu/theses/20)
- Laycock, George. 1966. *The Alien Animals: The story of Imported Wildlife*. New York: Natural History Press.
- Leopold, Aldo. (1949). 1969. *The Sand County Almanac*. NY. New York: Random House.
- Levinas, Emmanuel. 1985. *Ethics and infinity: Conversations with Philippe Nemo*. Pittsburgh: Duquesne University Press.
- Lévi-Strauss, Claude [1962]. 1964. *Totemism*. Translated by Rodney Needham. London: The Merlin Press Ltd.
- [1973] 1994. *Structural Anthropology*. London: Penguin Books.
- Lind-af-Hageby, Lizzy, and Leisa Schartau. (1903). 2012. *The Shambles Of Science: Extracts From The Diary Of Two Students Of Physiology*. LA: Hardpress.
- Linklater, Wayne. 2017. 'Predator free 2050 is scientifically flawed'. *Sciblogs*, 1 December: 1 <https://ndhadeliver.natlib.govt.nz/webarchive/20220622093355/https://sciblogs.co.nz/politecol/2017/05/09/predator-free-2050-scientifically-flawed/>
- 2018. 'Facts don't give scientists a monopoly on the truth'. *Stuff*, 13 November: <https://www.stuff.co.nz/environment/108533174/facts-dont-give-scientists-a-monopoly-on-the-truth>
- 2019. 'Science to resolve environmental conflicts'. *Sciblogs*, 4 October: <https://ndhadeliver.natlib.govt.nz/webarchive/20220622093355/https://sciblogs.co.nz/politecol/2019/04/10/science-4-environmental-conflicts/>
- Linklater Wayne, and Jamie Steer. 2018. 'Predator Free 2050: A

- Flawed Conservation Policy Displaces Higher Priorities and Better, Evidence-based Alternatives'. *Conservation Letters*, 11 (6).
- Linzey, Andrew. 1976. *Animal Rights: A Christian Perspective*. London: SCM Press.
- Littin, Kate, Elizabeth. 2004. *The Behaviour, Pathophysiology and Pathology of Brushtail Possums (Trichosurus vulpecula) Poisoned with 1080 or Brodifacoum, and the Implications for Possum Welfare*. PhD. Palmerston North: Massey University.
- Lo, Yeuk-Sze. 2001. 'The Land Ethic and Callicott's Ethical System (1980-2001): An Overview and Critique'. *Inquiry* 44 (3): 331-358.
- Loo, Alex. 2019. 'We can't even house our own: Mayor fears Levin not ready for influx of refugees'. *Horowhenua Mail* 1.
- Ludders, John, W., Robert. H. Schmidt, F. Joshua Dein and Patricia N. Klein. 1999. 'Drowning is not Euthanasia'. *Wildlife Society Bulletin* 27 (3): 666-670.
- MacDonald, Nikki. 2013. 'Can New Zealand really be pest-free?' *Stuff*: 23 March: <https://www.stuff.co.nz/dominion-post/editors-picks/8461303/Can-New-Zealand-really-be-pest-free#:~:text=And%20we%20know%20it's%2C%20technically,eradication%20progressing%20across%20the%20country>
- 2018. 'Should we learn to live with introduced species rather than wipe them out completely?' *Stuff*, 20 January: <https://www.stuff.co.nz/environment/100483985/should-we-learn-to-live-with-introduced-species-rather-than-wipe-them-out-completely>
- Macinnis-Ng, Cate. 2019. '1080 debate: time to face reality'. *The University of Auckland blog*, 17 January: <https://www.auckland.ac.nz/en/news/2019/01/17/1080-debate-face-reality.html>
- MAF, Landcare. 2010. 'How Humane are our Pest control tools? Technical Paper': <https://www.agriculture.govt.nz/dmsDocument/4009/direct>
- Mallik, Kenan. 2020. 'Don't let the victors define morality – Hiroshima was always indefensible'. *The Guardian*, 9

- August: <https://www.theguardian.com/commentisfree/2020/aug/09/don't-let-the-victors-define-morality-hiroshi-ma-was-always-indefensible>
- Marangudakis, Manussos. 2001. 'The Medieval Roots of our Ecological Crisis'. *Environmental Ethic* 243-260; Research Gate, pp. 1-24: https://www.researchgate.net/publication/296880808_The_medieval_roots_of_our_ecological_crisis
- Marcuse, Herbert. 1964. *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. London & New York: Routledge.
- Marris, Emma. 2013. *Rambunctious Garden: Saving Nature in a Post-Wild World*. Bloomsbury: Bloomsbury Publishing.
- Marsh, George Perkins. 1864. *Man and Nature*. London: Sampson Low, Son and Marston, H Ludgate Hall.
- Mason, Jim. 2005. *An Unnatural Order: The Roots of our Destructiveness of Nature*. New York: Lantern Books.
- Mason, Peter. 1997. *The Brown Dog Affair*. Two Sevens Publishing.
- Mathews, Jane. 2018. 'Forgotten World Highway fun, animal carcasses, sausages and fox terrier races'. *Stuff*, 8 October: <https://www.stuff.co.nz/taranaki-daily-news/lifestyle/107661237/forgotten-world-highway-fun-animal-carcasses-sausages-and-fox-terrier-races>
- McCrow-Young, Ally, Tobias Linné and Annie Potts. 2015. 'Framing Possums: War. Sport and Predators in Depictions of Brushtail Possums in New Zealand Print Media'. *Animal Studies Journal* 4 (2): 29-54.
- McGlone, Ivan. 1989. 'The Polynesian Settlement of New Zealand in relation to Environmental and Biotic Changes'. *New Zealand Journal of Ecology* 12: 115-129.
- McIntosh, Robert P. 1985. *The Background of Ecology: Concept and Theory*. Cambridge: Cambridge University Press.
- McNamara, Ray and Maria McNamara. 2009. 'Love of Nature and Love of God: A Christian Ecological Spirituality'. In *Spirit and Nature: The Study of Christian Spirituality in a Time of Ecological Urgency*, by Ed. Timothy and Ray Maria McNamara Hessel-Robinson, 255-276. Eugene, Oregon: Pickwick Publications.

- McQueen, Fiona. 2017. *The Quiet Forest: The Case against Aerial 1080*. Khandallah, Wellington: Tross Publishing.
- Merchant. 1989. *Ecological Revolutions: Nature, Gender, and Science in New England*. Chapel Hill, NC: University of North Carolina Press.
- (1980). 1990. *The Death of Nature: Women, ecology and the scientific revolution*. San Francisco. Harper and Row: Harper and Row.
- 2005. *Radical Ecology: The Search for a Livable World*. NY: Routledge.
- 2008. 'The Violence of Impediments. Francis Bacon and the Origins of Experimentation'. *Isis* 9 (4): 731-760.
- Miller, David Rei. n.d. *Western and Māori Values for Sustainable Development*. Accessed October 19, 2020: <http://www.Firstfound.org/david%20miller.htm>
- Ministry for Primary Industry, National Animal Welfare Advisory Committee. 2023. 'Animal sentience: their emotions, feelings, and experiences of life'. Accessed December 20, 2020: <https://www.mpi.govt.nz/animals/animal-welfare/national-animal-welfare-advisory-committee/animal-sentience-their-emotions->
- Morris, Michael. C. 2020. 'Predator Free New Zealand and the 'wa 'War' on Pests: Is it a just war?' *J. Agriculture and Environmental Ethics* 33: 93-11.
- Morton, Jamie. 2018. 'One two 1080 punch promising weapon in war on pests'. *New Zealand Herald*, 29 July: <https://www.nzherald.co.nz/nz/one-two-1080-punch-promising-weapon-in-war-on-pests/MB2TPJXN2DJ3FR6JTZ2QSVSYGY/>
- Munroe, David; Jamie Steer and Wayne Linklater. 2019. 'On allegations of invasive species denialism'. *Conservation Biology* 33 (4).
- Murrie, Greg. 2013. 'Death-in-life: Curare, restrictionism and abolitionism in Victorian and Edwardian anti-vivisectionist thought and Abolitionism in Victorian and Edwardian anti-vivisectionist thought'. In *Animal Death*, ed., by Fiona Probyn-Rapsey and Jay. Fiona Probyn-Rapsey and Jay Johnson J, 253-276. Sydney: Sydney

- University Press.
- Nelson, Robert H. 2009. *The New Holy Wars: Economic Religion versus Environmental Religion in Contemporary America*. Pennsylvania: Pennsylvania State University Press.
- Neumann, Jeff. 2010. 'New Zealand School holds Possum Throwing Contest'. *Gawker*, 23 October: <https://gawker.com/5645598/new-zealand-school-holds-possum-throwing-contest>
- Newshub. 2014. 'Expanded 1080 drop to curb 'plague' of rats', 29 January: <https://www.newshub.co.nz/politics/expanded-1080-drop-to-curb-plague-of-rats-2014012917>
- AM Panel. 2023. 'Patrick Gower calls for canned children's feral cat killing competition to return': 19th April: <https://www.newshub.co.nz/home/new-zealand/2023/04/patrick-gower-calls-for-canned-children-s-feral-cat-killing-competition-to-return.html>
- New World Encyclopedia. n.d. 'Ecology'. Accessed 25 September, 2020: <https://www.newworldencyclopedia.org/entry/Ecology#:~:text=Ecology%20or%20ecological%20science%2C%20is,the%20organisms%20and%20their%20environment>
- New Zealand A-Z. n.d 'Kiwi/New Zealand National Stereotype'. Accessed 25 May, 2021: <http://www.newzealandatoz.com/index.php/page/display/1055/>
- Nobis, Nathan. 2016. 'Tom Regan on Kind Arguments against Animal Rights and for Human Rights'. In *The Moral Rights of Animals.*, by Mylan Engel Jr & Gary Comstoc, 65-80. Lexington Books.
- Northern Advocate. 2018. 'Damned if you do and damned if you don't'. *New Zealand Herald*, 8 September: <https://www.nzherald.co.nz/nz/1080-damned-if-you-do-and-damned-if-you-don't/T1T27ODNZRBG3LY65PKUVJCCAPQ/>
- Noss, Reed. 1998. 'Aldo Leopold was a conservation biologist'. *Wildlife Society Bulletin*, 26 (4): 713-718.
- NZAVS. (NZ Anti-Vivisection Society). n.d. New Stats available: 'Animals used on NZ for science in 2020'. Accessed

- November 1, 2022: <https://nzavs.org.nz/news/2022/05/26/animals-used-in-nz-for-science-in-2020/>
- O'Callaghan, Jody. 2019. 'Conservationist Jane Goodall says more humane ways than 1080 to deal with invasive species'. *Stuff*, 28 May: <https://www.stuff.co.nz/environment/113058466/conservationist-jane-goodall-says-more-humane-ways-than-1080-to-deal-with-invasive-species#:~:text=%22The%20invasive%20species%20are%20harming,300%20days%20of%20the%20year>
- One News. 2020. 'Possum carcass being hurled around Coromandel park disappoints SPCA', 6 July: <https://www.1news.co.nz/2020/07/06/possum-carcass-being-hurled-around-coromandel-park-disappoints-sPCA/>
- Seven Sharp. 2022. 'Innocent Stewart Island children catching pretty pests': <https://www.youtube.com/watch?v=IagGOsaonYk>
- Owens, Brian. 2017. 'Behind New Zealand's Wild Plan to Purge all Pests'. *Scientific America*, 11 January: <https://www.scientificamerican.com/article/behind-new-zealands-wild-plan-to-purge-all-pests1/>
- Pablo, Richard. 1995. *Apocalypse: A People's Commentary on the Book of Revelation*. NY: Orbis Books.
- Pak, Michael S. 2011. 'Environmentalism, Then and Now: From Fears to Opportunities, 1970-2010'. *Environ, Science and Technology*, 45: 5-9.
- Palmer, Scott. 2019. 'Outrage over death-fest possum-killing fundraiser for Drury School'. *Newshub*, 19 June: <https://www.newshub.co.nz/home/new-zealand/2019/06/outrage-over-death-fest-possum-killing-fundraiser-for-drury-school.html>
- Passmore, John. 1980. *Man's Responsibility for Nature: Ecological Problems and Western Tradition*. London: Duckworth.
- Patterson, John. 1998. 'Respecting Nature: a Māori Perspective'. *World-views* 2, (1): 69-78.
- Pearce, David. 1995. 'The Hedonistic Imperative'. Hebweb: <https://www.hebweb.com/>

- ://www.hedweb.com/
- Pearce, David. 2009. 'Reprogramming Predators-Blueprint for a Cruelty-Free World'. *Hedweb*. Accessed October 13: <https://www.hedweb.com/abolitionistproject/reprogramming-predators.html>
- . 2015. *The New Wild: Why Invasive Species will be Nature's Salvation*. London: Icon Books.
- Pederick, Evan. 2014. 'Climate Change, Apocalypse and the Community of Shalom'. *Anglican EcoCare Journal of Ecotheology*, 1 (Spring): 1-24.
- Pesic, Peter. 1999. 'Wrestling with Proteus: Francis Bacon and the 'Torture' of Nature'. *Isis* 90 (1): 81-94.
- Phelan, Mathew. 2018. 'The Menace of Eco-Fascism'. *New York Review of Books*, 22 October: <https://www.nybooks.com/daily/2018/10/22/the-menace-of-eco-fascism/>
- Phelan, Norm. 2007. *The Longest Struggle: Animal Advocacy from Pythagoras to Peta*. NY: Lantern Books.
- Phelps, Norm. 2007. *The Longest Struggle: Animal Advocacy from Pythagoras to PETA*. NY: Lantern Books.
- Phillips, Jock. 2007. 'Story-Kiwi'. *Te Ara-The Encyclopedia of New Zealand*. Accessed October 1, 2020: <http://www.TeAra.govt.nz/en/kiwi/page-4>
- Piers, Locke. 2016. 'Conflict, Coexistence, and the Challenge of Rethinking Human–Elephant Relations'. In *Humans and Elephant Conflict, Negotiation and Coexistence: Rethinking Human-Elephant Relations in South Asia*, by Piers Locke and Jane Buckingham. Oxford: Oxford University Press.
- Pigliucci, Massimo. 2000. 'Are Ecology and Evolutionary Biology soft sciences'. *Annales Zoologici Fennici*, Vol. 39, No. 2 (2002), pp. 87-98 39 (2): 87-98.
- Pineño, Oska. 2010. *The thinking rat: The new science of animal learning*. CreateSpace Independent Publisher.
- Pollan, Michael. 2020. 'An Animal's Place'. *New York Times*: https://www.yourhomeworksolutions.com/wp-content/uploads/edd/2020/09/pollan_michael_an_animal_s_place__1_.p

- Pollard, Jo. 2019. 'Will NZ's Department of Conservation win against rodents and stoats with 1080 poison?' *1080Science*.
<https://1080science.co.nz/1080-chemistry/>
- Popper, K. R. [1976] 2002. *Unended Quest: An Intellectual Autobiography*. London and New Yor: Routledge.
- Potts, Annie. 2009. 'Kiwis against Possums: A Critical Analysis of Anti-Possum Rhetoric in Aotearoa New Zealand'. *Society and Animals* 17: 1-20.
- Pryor, Ashle. 2011. 'The Unacknowledged Legacy of P. D. Ouspensky's Tertium Organum on the Development of Leopold's 'Thinking Like a Mountain''. *Journal for the Study of Religion, Nature and Culture* 5 (4): 465–490.
- Regan, Tom. 1975. 'The moral base for vegetarianism'. *Canadian Journal of Philosophy* 5 (2): 181-214.
- . 1992. 'Does Environmental Ethics Rest on a Mistake' *The Monist* 75 (2): 161-182.
- . 2003. *Animal Rights, Human Wrongs: An Introduction to Moral Philosophy*. Rowman & Littlefield Publishers.
- . [1983]. 2004. *The Case for Animal Rights*. Berkeley: University of California Press.
- Resnick, Brian. 2019. 'More than a quarter of all birds have disappeared from North America since 1970'. *Vox*, 9 September: <https://www.vox.com/energy-and-environment/2019/9/19/20873714sparrows-blackbirds-birds-north-america-study-science>
- Ricciardi, Anthony and Rachael Ryan. 2018. 'The exponential growth of invasive species denialism'. *Biological Invasions* 20 (3): 549-553: <https://doi.org/10.1007/s10530-017-1561-7>
- Richards, Jay. 2006. 'Texas Distinguished Scientist wants you dead'. *Action Institute Powerblog*: <https://blog.acton.org/Archives/843-the-2006-texas-distinguished-scientist-wants-you-dead.html>
- Richards, Robert J. 2007. 'Ernst Haeckel's Alleged Anti-Semitism and Contributions to Nazi Biology'. *Biological Theory* 1: 97-103.
- Rinčić, Iva and Amir Muzur. 2011. 'Fritz Jahr: The Invention of Bioethics and Beyond'. *Perspectives in Biology and Medicine*,

- Autumn 54 (4): 550-6.
- Rivero, Nicolas. 2019. 'The Brown Dog Affair' *Quartz Weekly Obsession*: <https://qz.com/emails/quartz-obsession/1544055/>
- Robinson, Reihana. 2017. *The Killing Nation: New Zealand's State Sponsored Addiction to Poison 1080*. Amherst, Massachusetts: An Off the Common Book.
- Rocco, Alfredo. 1925. 'The Political Doctrine of Fascism'. Source: *Quotes of Famous People*: [//quotepark.com/quotes/1999673-alfredo-rocco-for-liberalism-the-individual-is-the-end-and-soci/](http://quotepark.com/quotes/1999673-alfredo-rocco-for-liberalism-the-individual-is-the-end-and-soci/)
- Rollin, Bernard. E. (2007). 'Animal mind: science, philosophy, and ethics'. *The Journal of Ethics* 11 (3): 253-274.
- Rosan, Peter. 2014. 'The Varieties of Ethical Experience: A Phenomenology of Empathy, Sympathy, and Compassion'. *Phänomenologische Forschungen*, 155–89.
- Rose, Deborah Bird. n.d. 2008. 'Judas Work: Four Modes of Sorrow'. *Environmental Philosophy* 5, (2): 51-66.
- . 2011. *Wild Dog Dreaming: Love and Extinction (Under the Sign of Nature)*. Charlottesville: University of Virginia Press.
- . 2013. 'In the shadow of all this death'. In *Animal Death*, by Jay Johnston and Fiona Probyn-Rapsey. Sydney: Sydney U. Press.
- . 2014. 'Country and the Gift'. *Sydney Environmental Institute*: <https://www.youtube.com/watch?v=suSbvoAw0g4>
- Rose, Deborah Bird and Thom van Dooren. 2011. 'Unloved Others: Death of the Disregarded in the Time of Extinctions'. *Australian Humanities Review* 50: <https://blog.acton.org/archives/843-the-2006-texas-distinguished-scientist-wants-you-dead.html>
- Ross, James and Charles Eason. 2021. 'Sodium fluoroacetate (1080) in relation to its use in New Zealand Revisited: A 2021 Review'. *Lincoln University Wildlife Management Report*, No. 74.
- Roys, Julie. 2010. 'Environmental Misanthropy'. *The Roys Report*, 15 December: <https://julieroys.com/environmentalist-misanthropy/>

- Russell, Denise and Singer, Peter. 1997. 'An Interview with Professor Peter Singer'. *Animal Issues* 1(1): <https://ro.uow.edu.au/ai/vol1/iss1/4>
- Russell, James C; Philip H. Brown; Andrea E. Byrom and John G. Innes. 2015. 'Predator-Free New Zealand: Conservation Country'. *Bio- Science* 65 (5): 520-525.
- Russell, James and Tim Blackburn. 2017. 'The Rise of Invasive Species Denialism'. *Trends in Ecology & Evolution* 32 (1): 3-6.
- Sagoff, Mark. 1999. 'What's wrong with exotic species'. *Philosophy & Public Policy Quarter* 19 (4): 16-23.
- Santmire, Paul, H. 1985. *The Travail of Nature: The Ambiguous Ecological Promise of Christian Theology*. Minneapolis: Fortress Press.
- 2006. 'Partnership with Nature According to the Scriptures: Beyond the Theology of Stewardship'. In *Environmental Stewardship: Critical Perspectives, Past and Present*, by R.J. Berry. London: T & T Clarke.
- Satherley, Dan. 2018. '1080 activism: Going down the conspiracy wormhole'. *Newshub*, 30 August: [Sat://www.newshub.co.nz/home/rural/2018/08/1080-activism-going-down-the-conspiracy-wormhole.html](http://www.newshub.co.nz/home/rural/2018/08/1080-activism-going-down-the-conspiracy-wormhole.html)
- Schairer, Sara. 2019. 'What's the difference between empathy, sympathy, and compassion?' *Chopra*, 23 November: chopra.com/articles/whats-the-difference-between-empathy-sympathy-and-compassion
- Schuster, John Andrew. 1995a. *The Scientific Revolution: An Introduction to the History and Philosophy of Science*. Sydney: University of Sydney.
- 1995b. *The Scientific Revolution: An Introduction to the History and Social Studies of Science Philosophy of Science*. Sydney: University of Sydney.
- Schuster, John Andrew and Richard, R. 1986. *The Politics and Rhetoric of Scientific Method*. Dordrecht, Holland: Reidel Publishing Co.
- Schweitzer, Albert. (1931) 2009. *My Life and Thought: An Autobiography*. Baltimore: John Hopkins Press.

- (1923) 1987. *The Philosophy of Civilization*. New York: Prometheus Books.
- SCOOP. 2014. 'Battle for Our Birds launched to save native species'. 30 January: https://www.scoop.conz/stories/PA_1401/S00196/battle-for-our-birds-launched-to-save-native-species.htm
- 2019. 'Battle for our Birds branding to be faded out', 11 July: <https://www.scoop.co.nz/stories/HL1907/S00109/battle-for-our-birds-branding-to-be-faded-out.htm>
- Seligman, Martin. 1972. 'Learned Helplessness'. *Annual Review of Medicine* 23: 407-412.
- Sewell, Anne. (1877) 1907. *Black Beauty: The Autobiography of a Horse*. Dodge Publishing Co.
- Shaw, George Bernard. (1909) 2009. *The Doctor's Dilemma: Preface on Doctors*. Project Gutenberg, 26 March: <https://www.gutenberg.org/ebooks/5069>
- Shellenberger, Michael. 2019. 'Why Apocalyptic Claims About Climate Change Are Wrong'. *Forbes*, 25 November: <https://www.forbes.com/sites/michaelshellenberger/2019/11/25/why-everything-they-say-about-climate-change-is-wrong/?sh=fc8b68312d6a>
- 2020. *Apocalypse Never: Why Environmental Alarmism Hurts Us All*. NY: Harper Collins Publisher.
- Shelley, Mary. [1880]. 2018. *Frankenstein or the Modern Prometheus*. Puffin.
- Sherley, Miranda. 2007. 'Is Sodium Fluoroacetate (1080) a Humane Poison?' *Animal Welfare* 16: 449-458.
- Simberloff, David. 2003. 'Confronting Introduced Species: A form of Xenophobia?' *Biological Invasions* 5: 179-192.
- Singer, Peter. (1975), 2002. *Animal Liberation*. New York: Harper Collins Publishers.
- 1993. *Practical Ethics*. 2nd Edition. Cambridge: Cambridge University Press.
- 2003. 'Not for Humans Only: The Place of Nonhumans in Environmental Issues'. In *Environmental Ethics: An Anthology*, by A. Light & H. Rolston III, 55-64. Carlton,

- Australia: Blackwell Publishing.
- Smith, Robert Leo and Stuart L. Pimm. 2023. (Updated 3 Feb) 'Ecology'. *Encyclopedia Britannica*. <https://www.britannica.com/science/ecology>
- Society For Ecological Restoration. n.d. 'What is Ecological Restoration?' Accessed October 15, 2020. <https://www.ser-rrc.org/what-is-ecological-restoration/>
- Solomon, Robert C. 1976. *The Passions*. NY: Anchor Press.
- Soulé, Michael. 1985. 'What is Conservation Biology'. *Bioscience*, 727-734.
- 2013. 'Editorial - the New Conservation.' *Conservation Biology*, 895-897.
- Spangler, Catherine, Sophie Myszkowski and Caitlin Cadieux. 2019. 'The Rat Apocalypse in New Zealand-War on Rats'. *The Atlantic*, 5 September: <https://www.theatlantic.com/video/index/597415/war-on-rats/>
- Staudenmaier, Peter. 2011. 'Fascist Ecology: The "Green Wing" of the Nazi Party and its Historical Antecedents'. In *Ecofascism Revisited: Lessons from the German Experience*, by Janet Biehl and Peter Staudenmaier, 13-42. Porsgrunn: New Compass Press.
- Steer, Jamie 2015. *The Reconciliation Of Introduced Species in New Zealand: Understandings from three 'Exceptional' Case Studies*. PhD. Auckland: The University of Auckland.
- 2015. 'Scientific research on introduced wildlife in New Zealand: For whom and at what cost?' *New Zealand Science Review* 72 (4): 87-96.
- 2016a. 'A war on pests and weeds is 'malicious' and 'incompetent' and will ultimately fail'. *Stuff*: <https://www.stuff.co.nz/science/82113675/a-war-on-pests-and-weeds-is-malicious-and-incompetent-and-will-ultimately-fail>
- 2016b. 'Introduced species'. *Radio New Zealand*, 17 September: <https://www.rnz.co.nz/national/programmes/saturday/audio/201816566/jamie-steer-introduced-species>
- 2018. 'Reply to the Threatened Species Ambassador'. *Sciblogs*. Accessed January 1, 2020: <https://ndhadeliv>

- er.natlib.govt.nz/ web archive/20220622093355/https://sciblogs.co.nz/so-shoot-me/2018/02/21/reply-to-the-threatened-species-ambassador/
- Steer, Jamie and Rowan Taylor. 2016. (28 June). 'Which scientists have got it right about introduced wildlife in New Zealand'. *SciBlogs*. Accessed January 10, 2020.
- Stoll, Mark. 2011. 'Sagacious Bernard Pallisy, Pinchot, Marsh, and the Connecticut Origins of American Conservation'. *Environmental History* 16: 4-37.
- . 2015. *Inherit the Holy Mountain: Religion and the Rise of American Environmentalism*. NY: Oxford University Press.
- Stuff. 2012. *Best-Dressed Possum Competition 'sick*. 1 August: <http://www.stuff.co.nz/national/7392399/Best-dressed-possum-competition-sick>
- Tambiah, Stanley Jeyaraja. 1990. *Magic Science, Religion, and the Scope of Rationality*. Cambridge: Cambridge University Press.
- Taylor, Paul. [1986] 2011. *Respect for Nature: A Theory of Environmental Ethics*. Oxfordshire: Princeton University.
- TerraNature. n.d. 'New Zealand Ecology: Extinct Birds'. Accessed October 16, 2020: <http://www.terrature.org/extinctBirds.htm>
- The International, Society for Ecological Restoration. 2004. 'The SER International Primer on Ecological Restoration'. Restoration Science & Policy Working Group 2 (Section 2 .P3): https://www.ctahr.hawaii.edu/littonc/PDFs/682_SERPrimer.pdf
- The Facts, 1080. n.d. 'Are we winning the Battle for our Birds'. Accessed Sept 6, 2020: <http://www.1080facts.co.nz/news/are-we-winning-the-battle-for-our-birds>.
- Thomas, Chris, D. 2018. *Inheritors of the Earth: How Nature is Thriving in an Age of Extinction*. UK: Penguin Books.
- Thomas, David. 2005. 'Laboratory animals and the art of empathy'. *Journal of Medical Ethics* 31 (4): 197-202.
- Tillich, Paul. (1959) 1964. *Theology of Culture*. London:Oxford University Press.
- Toki, Nicola. 2017. 'Nicola Toki's update: Killing with kindness'. *Department of Conservation*, 18 October: <https://blog.doc>.

- govt.nz/2017/10/18/second-nature-by-nic-toki-killing-with-kindness/
- Tolstoy, Leo. (1893). 2009. *The Kingdom of God Is Within You*. Guildford: White Crow Books.
- Totman, Conrad. 2014. *Japan: An Environmental History*. NY: Bloomsbury Publishing.
- Treves, Adrian; Francisco J Santiago-Ávila and William S. Lynn. 2019. 'Just preservation'. *Animal Sentience* 27 (1).
- Trevett, Claire and David Fisher. 2015. 'All Blacks silver fern designer takes swipe at shortlisted flags'. *New Zealand Herald*, 3 September: <https://www.nzherald.co.nz/nz/all-blacks-silver-fern-designer-takes-swipe-at-shortlisted-flags/ZJZ2JXKDJF6ROVJKJHMW7KO7CU/>
- Tsing, Anna. 1995. 'Empowering nature, or some gleanings in bee culture'. In *Naturalizing Power. Essays in Feminist Cultural Analysis*, by S. Yanagisako and C. Delane, 113-143. New York: Routledge.
- Tulloch, Lynley. 2017. 'Uruti Possum Hunt and School Violence'. *Scoop*, 11 August: [scoop.co.nz/stories/L1708/S00023/uruti-possum-hunt-and-school-violence.htm](https://www.scoop.co.nz/stories/L1708/S00023/uruti-possum-hunt-and-school-violence.htm)
- 2017. 'Predator Free 2050 and The Call to Arms'. *Scoop-Politics*, 16 October. <https://www.scoop.co.nz/stories/PO1710/S00117/predator-free-2050-and-the-call-to-arms.htm>
- Tūtira Mai. 2020. 'Respect and Mana: A Tree Felling Experience'. Accessed October 28, 2020: <https://www.tutiramai.co.nz/blog/respect-and-mana-a-tree-felling-experience>
- Twigg, L. E. and R. W. Parker. 2010. 'Is sodium fluoroacetate (1080) a humane poison? The influence of mode of action, physiological effects, and target specificity' *Animal Welfare*, 19 (3): 249-263.
- Underwood, Emily. 2015. 'Rats forsake chocolate to save a drowning companion'. *Science*, 12 May: <https://www.science.org/content/article/rats-forsake-chocolate-save-drowning-companion>

- . 2019. 'Lab rats play hide-and-seek for the fun of it, new study shows'. *Science*, 12 September: <https://www.science.org/content/article/lab-rats-play-hide-and-seek-fun-it-new-study-shows>
- Unti, B. and A. N. Rowan. 2001. 'A social history of postwar animal protection.' In *The state of the animals*, by D. J. Salem & A. N. Rowan. Washington, DC: Humane Society Press.
- UTS. (University of Technology. Sydney. n.d. 'What is Compassionate Conservation?' Accessed December 1, 2019: [//www.uts.edu.au / research-and-teaching/our-search /centre-compassionate-conservation/about-us/what-compassionate-conservation](http://www.uts.edu.au/research-and-teaching/our-search/centre-compassionate-conservation/about-us/what-compassionate-conservation).
- Van Dooren, Thom; Eben Kirksey and Ursula Münster. 2016. 'Multispecies Studies: Cultivating Arts of Attentiveness'. *Environmental Humanities* 8 (1): 1-23.
- Van Dyk, Peet. 2015. 'Responsible Stewardship: The Root of all Evil in Eco-Theology?' *Old Testament Essays* 8 (2): 523-535.
- Van Dyke, Fred. 2008. *Conservation Biology: Foundations, Concepts, Applications*, 2nd Edition. Maryland: Springer.
- Van Vianen, Josh; Olivia R. Burge, Archie T. MacFarlane and Dave Kelly. 2018. 'The effects of single aerial 1080 possum-control operations on common forest birds in the South Island, New Zealand'. *New Zealand Journal of Ecology* 42 (2): 169-178.
- Von Hofmannsthal, Hugo. 1902. 'The Lord Chandos Letter'. Accessed 2020: https://depts.washington.edu/vienna/DoCuments/Hofmannsthal/Hofmannsthal_Chandos.htm
- Von Uexküll, Jacob. (1934) 2010. *A Foray into the Worlds of Animals and Humans, with a Theory of Meaning*. Translated by Joseph D. O'Neil. Minneapolis: University of Minnesota Press.
- Wallack, Arian. 2018. 'Feminist Ferals'. Video: <https://www.youtube.com/watch?v=lpX-ZHHWN5sfemineferal2018>
- Wallach, Arian, and Chelsea Batavia, Michael Paul Nelson, Esty Yanco, Wayne L. Linklater, Scott P. Carroll, Danielle Celermajer, Kate J. Brandis, Jamie Steer; Daniel Ramp and

- Erick Lundgren. 2020. 'When all life counts in conservation'. *Conservation Biology* 34 (4): 997-1007
- Wallach, Arian D., Chelsea Batavia, Marc Bekoff, Shelley Alexander, Liv Baker, Dror Ben-Ami, Louise Boronyak, Adam P. A. Cardilin, Yohay Carmel, and et al Danielle Celermajor. 2020. 'Recognizing animal personhood in compassionate conservation'. *Conservation Biology*, 34 (5):1097-1106.
- Webb, Christine E., Peter Woodford and Elise Huchar Huchar. 2020. 'The study that made rats jump for joy and then killed them'. *BioEssays* 42 (6): <https://onlinelibrary.wiley.com/doi/full/10.1002/bies.202000030>
- Weber, Max. [1922] 1946. 'Science as a Vocation'. Translated and edited'. In *From Max Weber: Essays in Sociology*, by H.H. Gerth and C. Wright Mills, 129-156. New York: Oxford University Press.
- 1930. *The Protestant Ethic and the Spirit of Capitalism*. Translated by Talcott Parsons with a forward by R. H. Tawney. London: G Allen & Unwin.
- 1946. 'Science as a Vocation'. Translated and edited. In *From Max Weber: Essays in Sociology*, by H.H. Gerth and C. Wright Mills, 129-156. New York: Oxford University Press.
- 1946. *Essays in Sociology*. New York: Oxford University Press.
- Wehi, Priscilla M., Jacqueline R. Beggs and Tara G. McAllister. 2019. 'Ka mua, ka muri: the inclusion of mātauranga Māori in New Zealand ecology, Editorial'. *New Zealand Journal of Ecology* 43 (3): 1-8.
- Weikart, Richard. 2004. *From Darwin to Hitler: Evolutionary Ethics, Eugenics and Racism in Germany*. NY: Palgrave MacMillan.
- White, Gilbert. 1924. *The Natural History of Selborne (With Notes By Richard Kerton)*. Bristol: Arrowsmith.
- White, Lynn Townsend. 1967. 'The Historical Roots of our Ecological Crisis'. *Science*, 155: 1203-1207.
- Wigley, Tom. n.d. 2022. 'This may be the most Important book

- on the Environment ever written'. *Environmental Progress*. Accessed August 1, 2020: <https://environmentalprogress.org/praise-for-apocalypse-never>
- Wilmshurst, Jane. 2007. 'Human effects on the environment-Pre-European deforestation'. *Te Ara-the Encyclopedia of New Zealand*. Accessed 4 March 2023: <https://teara.govt.nz/en/human-effects-on-the-environment/print>
- Wilson, Scott. n.d. 'Animal and Ethics'. *Internet Encyclopedia of Philosophy*. Accessed October 22, 2022. <https://iep.utm.edu/animals-and-ethics/>
- Winograd, Nathan. n.d. 'The World's Most Harmful Invasive Mammalian Predator Rears Its Ugly Head'. Accessed October 1, 2019: <https://www.nathanwinograd.com/the-worlds-most-harmful-invasive-mammalian-predator-rears-its-ugly-head/>
- Wolf, Andrea. 2016. *The Invention of Nature: The Adventures of Alexander von Humboldt, the Lost Hero of Science*. London: John Murray.
- Worster, David. 1994. *Nature's Economy: A History of Ecological Ideas*. Cambridge: Cambridge University Press.
- Wright, Jan. 2011. *Evaluating the Use of 1080: Predators, Poisons and Silent Forests*. Wellington: Parliamentary Commissioner for the Environment.
- . 2017. *Taonga of a Nation: Saving New Zealand's birds*. Wellington: Parliamentary Commissioner for the Environment.
- Wybrow, Richard, Cameron. 1998. *The Bible, Becomes, and Mastery over Nature: The Old Testament and Its Modern Misreading*. Hamilton: Canada: McMaster University.
- Zachhuber, Johannes. 2020. *The World Soul in early Christian Thought*. Accessed October 1, 2020: https://www.academia.edu/5977922/The_world_soul_in_early_Christian_thought
- Zaragoza. Juan M. 2022. 'Rita Felski & Stephen Muecke Latour and the Humanities' Book Review. *Centaurus*, 64. 2, 551–554.

Appendix

Competitions in Schools to kill Possums and Rats

As I get to the end of writing this book and after a sleepless night trying to make sense of what I recently came across and mention below, I realise I may have been too lenient in my thinking on the shooting of possums (p. 147).

A friend of mine who read the last draft of this book informed me that the hunting of animals is a situation more like what Gosia Bryja writes of when describing the death of a bear (Ch 9: p. 147). He said that shooting is often not very accurate, leaving injured animals lying and suffering in the bush until death. This view was amplified when I read Gosia Bryja's latest essay; 'Language and the Knife: Silencing Nature' (2023). The paper is about the cruel hunting of bears supported by conservationists. In the article, Gosia speaks about the 'adrenaline rush' hunters get from the killing and the disregard for the lives of the bears. They are just objects, commodities, resources and recreational activity. Bryja also speaks of a spiritual connection to nature that many children naturally have that is done away with in hunters and many adults. Unfortunately, we see this disconnection with other beings and its replacement with 'recreational activity' and the 'adrenaline rush' of killing animals being pushed onto children in New Zealand by schools, parents and government agencies.

At around the same time that I read the above essay and listened to my friend's view on hunting I came across a news account (A) of a school's competition for children under 14 years of age as to who can kill the most feral cats. The winner would

get \$250. (Brownlee Kaysha and Mollie Swift, 2023). Also, I came across a news account (B) from last year of a similar competition with rats ('Innocent Stewart Island children catching pretty pests') (One News, Seven Sharp, 2022). Here children as young as 5 years competed for the largest dead rat, the one with the straightest tail, and the best coat. In one of these accounts, we have a young person looking down a rifle's viewfinder and in another, we have a young child amused with the amount of blood on his trap. None are mentioning the way the animals might have died and what the animal was experiencing at the time. I began to wonder if schools ever taught compassion and empathy besides this killing of animals. Nowhere was there any mention of recognition, not competition, given to those showing compassion perhaps those who couldn't go through with the killing and laid down their guns.

In still another news site, (C) I came across a conservationist reported as saying 'It's time we tried having a mature conversation about our country's feral cat problem' (Heeringa, Sarah, 2023). Unfortunately, I believe from the context of the article that 'mature conversation' meant agreeing with the killing of feral cats.

On a Newshub panel (D) Paddy Gower, a journalist, acting somewhat as a conservation prophet, got into the apocalyptic anti-feral cat mantra saying cats need to be shot, run over and wiped off the face of Aotearoa New Zealand; with a few smiles from the others on the show (Newshub, AM Panel: 19 April 2023). He is offering money as a reward for those who win the killing competition. Goodness me, what then, with this vehemence, would he do with the main predator in New Zealand, one that has done the main damage to the country, one that has probably killed more other animals than any other being—the human animal?

So, we see that all the above news sites came nowhere near a mature conversation about cats, rats and the environment. For example, the people on some of these sites seem to have no idea of the various people mentioned in this book. Admittedly, both sites B and D are often somewhat frivolous in their presentation

of issues, offering entertainment and distraction from life rather than considering all aspects of a topic, in this case, showing that there are other ways of engaging with non-human beings and the problems and anxiety they can cause us than by killing them. To get rid of the anxiety and problem through fun and games such as killing these non-human animals is to miss a chance of learning, through overcoming the anxiety, a new way of being in the world—a compassionate way. The question can be asked, though, if the education establishment is not doing this can we blame the media?

In contrast to the ‘mature conversation’ could we not then have more thoughtfulness, reflection and compassion on the issue maybe with a reference to some of the great minds in animal ethics: Mahavira (Jain). The Buddha, St Francis of Assisi, St Martin de Porres (who is said to have saved rats and mice found in the monastery from being poisoned); and more modern figures such as Albert Schweitzer, Peter Singer, Tom Regan, Meera Inglis and Anglican priest, Andrew Linzey, founder and president of the animal ethics centre at Oxford. If you want conservationists included one could add Jamie Steer, Arian Wallach, Gosia Bryja and Marc Bekoff. If children, let alone adults were introduced to these figures what a great education that would be. And one could always read Meera Inglis’s PhD. *Killing for Conservation: The Ethics of Life and Death in Conservation Policy* (2016) or the PhD by Jamie Steer: *The Reconciliation of Introduced Species in New Zealand: Understandings from three ‘Exceptional’ Case Studies* (2015), rather than the repetitive policy coming out of the Department of Conservation based on one paradigm, invasion biology, and a simplistic utilitarian ethics that allows for the sacrifice of one being for the group (what Regan calls environmental fascism (p 90). After reading some of the above, we would be ready for a mature debate on the killing of possums and rats. Given that even the British comedian, Ricky Gervais, (Bevan, 20 April 2023). shows a knowledge and understanding of the need for compassion towards cats, regardless of their labels, the above state of knowledge and discussion in New Zealand is very worrying.

Of course, it didn't help me, or maybe it did, that I encountered a possum in the tree a few weeks ago when taking the dogs out in the backyard at night. Our eyes met for some time before he or she stealthily and rather magically disappeared. But what struck me was that the possum appeared rather attractive—rather like a cat, unlike how possums are depicted in the news as apocalyptic monsters with their mouths open, teeth showing. But that, I suppose is part of the propaganda presented by the media and various government agencies such as conservation and education; and what we must rail against with the 'crazy type of love' that Deborah Bird Rose talks about in her article 'In the shadow of all this death' (Rose: 2013) found in the book *Animal Death* (see p. 106 of *Beware of the Human*)

Thinking about the above issue of 'feral' cats that has come up in the news again just as I finish writing this book motivates me still more to get the book out into the marketplace, the marketplace of Socrates where discussions can be had, and ideas shared rather than bought or won in a competition. Unfortunately, though, Socrates was pilloried by the establishment for his anti-establishment views.

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About the Author

Graham grew up in Lower Hutt, New Zealand. He studied philosophy at Holy Name Seminary, Christchurch, under the Jesuits, where he was introduced to phenomenological and existentialist philosophy, which were not then taught in the main New Zealand universities. He went on to Victoria University to study social anthropology, philosophy, and religious studies, gaining a B.A.(Hon) and an M.A. in anthropology. After graduation, Graham stayed briefly at the Jerusalem (NZ) commune founded by the poet James K. Baxter.

When first going to London in the late 1970s, he attended seminars and workshops in existential and phenomenological psychoanalysis at the Philadelphia Association, including workshops by R.D. Laing. Later, he trained in intercultural therapy at University College London and Nafsiyat under Jafar Kareem and Professor Roland Littlewood. He completed a PhD in medical anthropology at University College London under Roland Littlewood (a leading authority on race, culture and mental health) and also completed a MA in theology and became a priest in an Independent Catholic Church. While travelling in Southeast Asia in the 1980's Graham came across the Buddhist monk Buddhadāsa Bhikkhu and stayed at his jungle monastery, Suan Mokkh, in Thailand, for six weeks, engaging in meditation. After completing training in psychoanalysis at the Centre for Freudian Analysis and Research he went on to gain a post-graduate diploma in teaching mindfulness, at Bangor University. He has held positions of chaplain, co-manager of a counselling centre, trauma counsellor for refugees and psychotherapist in a psychiatric hospital for teenagers.

At present, Graham lives with his wife, Mee Ying, on a three-acre 'retreat setting' in the lower half of the North Island of New Zealand, where he sees a few analytic clients and teaches mindfulness. Occasionally they opened their place to both humans and animals who had needed a place of retreat for a

while. While initially, the main focus was going to be on offering a place of retreat to humans, it gradually dawned on them that one of the joys of living in the country was sharing the home with various non-human animals, including sheep, Middlemost in the Field, RamRam, Hope and Charity; chickens-including Kuku; dogs, Tianlung, Sasha, and FooWei; various birds that either lived on the place or found their way there and rabbits that kept the dogs on their toes.

As well as *Beware of the Human*, Graham has also written *Madness or Transcendence: A Psychoanalytic Account of Chinese Tang-ki Spirit Medium Healing* (2007) and various articles on cultural and social aspects of psychotherapy.

¹ The American philosopher and cultural ecologist David Abram coined the phrase ‘the more-than-human world’ (1997). Later, he used the term ‘the commonwealth of breath’ to refer to all living beings, including the earth (2014). In like manner, Pope Francis called the earth ‘our common home’ in his encyclical (2015) on the environment—‘Laudato Si—On Care of our Common Home.’ These constructions help us recognise the world as more than a technical or utilitarian entity and as more than just a place for human beings. It is a home for all living beings.

² Eduardo Kohn, an anthropologist, writes within this ‘more-than-human’ mode. His writings include *How Forests Think: Towards an Anthropology Beyond the Human* (2013) and ‘How Dogs Dream: Amazonian Natures and the Politics of Transspecies’ (2007). Another anthropologist who writes in this vein is Piers Locke: ‘Conflict, Negotiation, and Coexistence: Rethinking Human-Elephant Relations in South Asia’ (2016).

³ Deborah Bird Rose’s essay ‘Judas Work: Four Modes of Sorrow’ is another work worth reflecting on. The paper is about feral donkeys in Australia. In the article, Rose describes how a ‘Judas collar’ (monitoring collar) is attached to one donkey, after which the jenny goes out and finds other donkeys. These animals are then killed. Rose talks of the ‘betrayals involved in the planned mass deaths of animals’ (2008: 51). She says that it is critical for us to understand that animal culling is based on a rhetoric of order (animals staying in their proper place), purity (native animals valued over introduced animals), and techno-efficiency (2008: 63). While some consider mass killings of donkeys by shooting them from helicopters efficient and effective, Rose sees such killings as a technology in a ‘sado-passionate’ mode that leads to the disappearance of empathy (2008: 63). She understands these killings as a desecration of the meaning of death and life for both those killed and the perpetrators of the massacre (2008: 63). Towards the end of the essay, she writes, *My heart goes out to the little jenny who is knocked out with a tranquilliser gun and fitted with a Judas collar. ... She will be left to recover and to find her companions, and from then on, men with guns, helicopters, radios, and GPS equipment will follow her. With them comes death. Time and again, she finds mates, only to see them mowed down. Time and again, she is left lonely and bewildered* (2008: 65). The essay is a moving account of what death means for the feral donkey when it is perverted by humans’ desire for domination and control. ‘Judas Work’, like the other writings mentioned in this chapter, is an inspiring work that can help us understand the subjective experiences of animals we are told do not belong here in New Zealand and which should be exterminated.

⁴ In criticising 1080, I do not deny the value of scientific knowledge, but I question an overwhelming trust in one paradigm and advocate for a better paradigm—compassionate conservation. As part of this criticism, space is given to what we often overlook in the discussion: the social science and philosophical aspects of the issue.

⁵ Journalist Michael Daly (2019) tracked down the initiator of this calculation to John Innes, a Landcare Research ecologist. But the number seemed to have come from ‘off the top of his head’ rather than through careful research. Innes says, ‘the figure was ‘rough and quick’ but ‘likely to be roughly accurate’. He continues, ‘Obviously, there is some total that is true, but in the end, they are in one sense not very defensible numbers, by science standards’ (Daly 2019). So much, then, for facts and figures.

⁶ In 2015, the rather militant name of the campaign, ‘Battle for the Birds’ was changed to a more benign name, ‘Tiakina Ngā Manu’ (care for/protect our birds) (SCOOP 2019: ‘Battle for our Birds branding to be faded out’). While the branding may have changed, there has been no noticeable change in DoC’s attitude and behaviour.

⁷ While the establishment of Predator Free New Zealand with its emphasis on the use of 1080 poison might seem like just a decision to establish a movement based on objective science and goodwill, the writer Les Kelly (*Duped - the True Story behind Predator Free New Zealand* 2020) reveals another side of the venture made up of political and personal shenanigans within conservation and political institutions. Kelly presents himself as the originator of the concept of the ‘Predator Free’ movement where a grassroots group was going to take the idea forward and base it on non-toxic interventions. He outlines how the group’s ideas were purloined by establishment figures and used by the government without the original idea of no toxins. While this is, of course, the view of one person, it needs to be taken seriously, as this is exactly what social scientists and historians of science would say often happens in the development of science and in political and social decision-making—more than pure science is at play.

⁸ We see the name-calling in Dave Hansford’s *Protecting Paradise* (2016: 7, 109-121). At one time, a member of an online discussion on 1080 called me a troll. Is that better than being called a rat? Upon replying, pointing out a logical error in the person’s reasoning, the person responded, ‘I know what kind of people you hang out with’, which the person did not know. I attempted to point out that when I disagreed on 1080, I was labelled a troll, but when I agreed on other subjects, no label was applied.

Just for the record, and to appease the minds of those who think anti-1080 people are science deniers, conspiracy theorists, etc. I am not a science denier. I accept the theory of evolution. I accept the fluoridation of

water. I even think the Covid virus should have been handled more firmly in New Zealand than it was. I also don't regard myself as anti-intellectual, having been a student at six universities, including the well-acclaimed University College London. And I have just enough paranoia to let me be suspicious of the hegemonic views of governmental agencies as seen in the mass killing policy of the conservation departments.

⁹ The accusation of 'invasive species denialism' has been used against those who question the pro-1080 discourse. James Russell (a New Zealand ecologist) and Blackburn speak in their article 'The Rise of Invasive Species Denialism' (2017) about the growth of people who question the 'scientific consensus on the harm caused by invasive species'. Environmental scientists Crowley; Hinchliffe et al. (2017) and Davis and Chew (2017) criticise Russell and Blackburn's work, pointing out that it contains only anecdotal material. In the same year, scientists Ricciardi and Ryan (2018) published another paper on invasive species denial: 'The Exponential Growth of Invasive Species Denialism'. Boltovskoy, Sylvester et al. (2018) criticised the paper, arguing that the evidence was cherry-picked and the conclusions unsubstantiated. Munroe, Steer, and Linklater (2019) also criticise the paper. Ricciardi and Ryan could not get enough information from the authors about the texts upon which they based their opinions. Nevertheless, they analysed 75 of the 77 published articles on which Ricciardi and Ryan based their conclusions and found no evidence of refuted facts that would imply invasive species denialism, and only five examples suggesting science denialism (2019). The above discussion shows the rhetorical nature of arguments often presented as scientific regarding 'invasive species denialism.'

¹⁰ Populations of sparrows have declined in the United States and Britain (Resnick, 2019). Who knows whether sparrows will become a protected species?

¹¹ Humans are rarely referred to as predators because they generally get food from places like Countdown or New World, and they coined the term 'predator' in the first place to describe animals they disliked. However, a BBC science correspondent writes about a group of scientists who consider humans to be super-predators (Amos, 2015). The scientists found humans took fish from their habitat at fourteen times the rate of marine animals, killed animals like lions and bears at nine times the rate these mammals killed other animals and concentrated on killing adult animals that could bear more offspring, thus leading to extinctions (Amos, 2015). It would be interesting to conduct a similar study on rats, possums and stoats compared to humans. Possibly, our 'over-the-top' hatred of animals called pests is a projection of how we feel about our own predatory tendencies.

¹² In this regard, it is interesting that there is a dog training programme called 'canine good citizens' in many dog clubs. Dogs can earn a canine good citizen's award by passing a test set by humans. People, on the other hand, are not required to possess a canine good guardian award when adopting a dog.

¹³ There is controversy in New Zealand over whether possums are responsible for TB in cattle. Professor Fiona McQueen (former Professor of immunology) claims New Zealand is now free of bovine tuberculosis. As the number of possums has not decreased and the TB rate has decreased, she suggests we cannot blame the possum for cattle TB (2017: 112-113).

¹⁴ You can see an example of the lives of non-human animals on Edgar's Farm Sanctuary's website, which shows the animals' subjectivity, intentionality, desires and the sufferings they experience. A disregard for an animal's subjectivity is also found in many writings on sheep, cows, and chickens, which focus on their utility value and how to raise them for food—an example of agricultural materialism. Vinciane Despret (2006) does the opposite. In 'Sheep do have opinions', she demonstrates the subjectivity of sheep. She has written various other articles on animals' subjectivity, for example, 'The Becomings of Subjectivity in Animal Worlds', (2008). See also her work on rats (Chapter 7, note 2).

¹⁵ Although the discourse has shifted to fleas on rats spreading the plague, the popular opinion has always been that rats spread the disease. In a more recent study, rats did not cause the first outbreak of the plague, but fleas and lice living on humans did (Cockburn, 2018).

¹⁶ In one edition of the *Horowhenua Mail* (Loo, 2019: 1) there is an article on the front page: 'We can't even house our own—Mayor fears Levin is not ready for the influx of refugees'. Another page (p. 39) has an article, titled 'Fighting against foreign invaders: Join the campaign to wipe out German and common wasps', referring, at least on the surface, to German and common wasps. That the two articles are in the same publication is a coincidence, or is it?

¹⁷ Scientism is the belief that 'science' can answer all questions about the world and that other subjects are not needed.

¹⁸ Bruno Latour seems to have moved away from his more critical views on the scientific enterprise and his strong constructivist stance (Zaragoza, 2022). So, now, he not only calls for refraining from just criticising facts but also for us to pay attention to 'matters of concern'. I also see my writing focusing not on the criticising of facts but on matters of concern, that which we owe to our fellow beings with whom we share this earth as a

home.

¹⁹ Thomas Kuhn's 1962 work, *The Structure of Scientific Revolutions*, is a classic in the philosophy of science. It changed the understanding of science from a previous Whig view, in which it was understood that over time there was an orderly progression of knowledge from ignorance to truth, to a more questioning view. This revolutionary perspective saw paradigm shifts as being just as important in scientific work as facts. Unfortunately, the older idea of science is still around and is seen in people like Hansford and other pro-1080 advocates.

²⁰ The river was always swimmable in summer, but now one must watch out for toxic algae. A few years ago, I visited the river on the way to visit my brother and thought I would give the dogs a swim, as in the summer, most of the rivers where I live can contain toxic algae. We went down by the water's edge, where I spotted a sign that read, 'Beware of 1080', which advised people to be careful of any animal bodies poisoned by 1080 that had come down the river.

²¹ But Carolyn Merchant does not fully let Christianity off the hook. While society until the Scientific Revolution in the 17th century had an approach to the earth that regarded it as a living being, Merchant, in *Reinventing Eden*, regards the Christian idea of dominion as merging with science, technology and capitalism, leading to the imperial attitude of reclaiming Eden by domination and control (Merchant, 2003: 11, 20). Dominionism also became part of the rhetoric of colonisation. Thus, in the 1850s, we had Methodist minister John Whiteley in Taranaki, New Zealand, supporting the sale of Māori land to Europeans, saying, 'I would have the natives paid as little as possible for these claims' (quoted in Frank Glen, 2018). According to Glen, 'Be fruitful, replenish the earth and subdue it' (Genesis 1: 28,) underlies Whitley's thinking and was a common saying at that time (Glen, 2018: 129).

On the other hand, we recognise in the Māori concepts of kaitiakitanga (guardianship or stewardship) and whanaungatanga (kinship) a positive recognition of the kinship of humans with all of nature and the role of humans as guardians. We observe this in practices like the blessing of trees when felling them. The trees are understood as the embodiment of Tane Mahuta, the god of the forest, and not only as an object of economic interest (Tūtira Mai. 2020. 'Respect and Mana: A Tree Felling Experience'). Another example is a 'rāhui', or ban, on access to certain areas where someone has died or on the use of specific resources that are decreasing. Also, I recently came across the situation of a Māori elder who went into a house to bless the body of a dead dog. I am not sure if a Christian priest or minister would do that. These customs and practices can undoubtedly inspire Europeans to think of their own stories about nature.

An example of rethinking biblical stories can be seen in the understanding of the passage in Genesis 2:15 to mean 'serving and protecting the land'. Such a passage goes well with the Genesis story of God making a covenant between God, the earth and every living creature (9:8); Isaiah's peaceable kingdom (Isaiah 11:6); and Mari Joerstad's work (2016) which shows that in the Old Testament, there is a view of non-human nature as composed of subjects rather than objects. All this helps us to deconstruct the traditional hegemonic idea of nature, built on dominionist, mechanistic and utilitarian concerns, all of which contribute to practices such as, in New Zealand, using poison as a legitimate way to solve a conservation problem.

²² That more birds disappeared from New Zealand before the arrival of Europeans than after they arrived may seem counterintuitive, as some consider that Māori people have more positive ideas about the relationship of humans with the environment than Europeans. At the end of a paper on the Polynesia settlement in New Zealand and its effects on the environment, the author, M.S. McGlone, notes a reluctance to accept the idea of environmental degradation caused by early Māori settlers. He understands this hesitation as based on the idea that 'pre-industrial hunter-gatherers and Neolithic agriculturalists lived in harmony with their environment, practised a conservation ethic and avoided short-sighted and exploitative destruction typical of later industrial societies' (1989: 126), a view that his paper critiques. It must be remembered, though, that the destruction of forests by European colonialists occurred at a faster rate than the destruction before their arrival (Anderson, 2009).

²³ Cicero (106 BC-43 BC), while acknowledging that the hunts were magnificent, also said, 'What pleasure can it give to a civilised man when... a noble beast is pierced through and through by a hunting spear' (Coates 1998: 38). Admittedly, Cicero was talking about African elephants, but perhaps this sentiment can be taken up and generalised to all sentient beings.

²⁴ Stoll (2015) opposes the view that Protestantism was associated with a negative view of the world. He argues that modern ecology is a direct inheritor of the Protestant, mainly Calvinist, view of nature. Stoll quotes Calvin: 'that it can be said reverently, provided it proceeds from a reverent mind, that nature is God' (2015: 21). And he gives the names of various people involved in early ecological thinking from Calvinist backgrounds,

including people like Von Humboldt, Ernst Haeckel, John Muir, Henry David Thoreau and Rachel Carson (Stoll, 2015). Stoll mentions Bernard Palissy (16th century early Calvinist and Huguenot artisan), in particular, as having an interest in nature and his work influencing the likes of George Perkins Marsh and Gifford Pinchot in the United States (Stoll, 2011). For Stoll, Palissy, and other predominantly French Calvinists had a healthy respect for environmental concerns. However, he recognises Palissy and other early Protestant writers as having a utilitarian and active approach to nature rather than an Arcadian approach (Stoll, 2011: 9, 10, 26). For Michael Pak, this commitment to a utilitarian perspective was a positive and not a negative attribute. Pak (2011: 8-9). Perhaps those who see the Protestant contribution to environmental thinking as negative value the Arcadian approach while seeing the utilitarian one as exploitative. To Pak's mind, an Arcadian conservation approach is often anti-technology and anti-development, if not anti-human, advocating for a retreat to the countryside that only a wealthy few can afford (2011: 10-11). For him, the Protestant utilitarian approach to the environment is more helpful and perhaps, in our time, the way to move environmental concerns forward.

²⁵ The sociologist Eileen Crist (1999: 9, 122, 203), criticises traditional science for often being 'mechanomorphic', which Van Dooren, Kirksey et al. define as 'projecting characteristics of machines onto forms of life' (2016: 8). Crist contends that the objective abstract language of the natural and behavioural sciences is not the only way to express knowledge about living beings and that a more ordinary everyday language could better reveal an animal's being—a being with its own mind and subjectivity (1999: 4-8). We could also argue that a non-human animal researcher would benefit more from being a participant observer (as in anthropology) rather than taking on the objective observer role of the traditional scientific researcher.

²⁶ There is controversy about what Bacon meant by some terms he used when speaking about science—see Pesic (1999), Merchant (2008) and Kureethadam (2017). But there is little doubt his idea of science was imperial, stressing nature's dominance for the sake of human beings.

²⁷ While visiting the United Kingdom in 2019, I had the privilege of visiting Selbourne, where Gilbert White carried out his work. His house is now a museum. Nearby is the church where he was the vicar and where he is buried.

²⁸ Haeckel is considered the founder of modern ecology. His work was extensive. While he believed in a hierarchy of cultures, this belief did not differ much from Darwin's and others' view at the time (Richards, 2007: 1, 3, 5). For some, Haeckel contributed to the rise of Nazi biological theories on war, racial struggle and racial annihilation (Gould, 1977; Gasman, 1998; Weikart, 2004; Staudenmaier, 2011). In the article 'Fascist Ecology: The Green Wing of the Nationalist Party and its Historical Antecedents' social ecologist and historian Peter Staudenmaier mentions an 'ideological overlap between nature conservation and national socialism' in Germany. He calls this eco-fascism (2011: 14). Staudenmaier gives an example of two people in the 19th century who contributed to this convergence of nature-centred interests and Nazi ideology: Ernst Arndt and William Riehl. He points out Arndt's extreme care and concern for nature, as observed in his 1815 essay, *On the Care and Conservation of Forests*. But Staudenmaier also points out Arndt's 'virulent xenophobic nationalism' discerned in Arndt's writing about the German soil and the German people, his inveighing against miscegenation and his tirades against non-German people, especially Jewish, French and Slav people. He says that Arndt placed a relationship between a 'love of land' alongside a 'militant racist nationalism' (2011: 15-16). Staudenmaier sees Riehl, a student of Arndt's, developing this ideology. To Staudenmaier, both figures were part of a Romantic anti-industrialist and anti-urban movement that helped form the Völkisch movement in the second half of the 19th century. The Völkisch crusade joined ethnocentric populism and nature mysticism (2011: 16-17). In the mid-1850s, this movement fused with Haeckel's social Darwinist views and, in Staudenmaier's opinion, contributed significantly to the National Socialist ideology of racism, nationalism and imperialism (2011: 18). It included a high value placed on nature, a downplaying of the value of human beings and any positive attempts to change the world. He sees some views as 'bearing an uncomfortable likeness to themes familiar to ecologically concerned people today' (2011: 22-23).

But Staudenmaier seems to consider ideas and practices tied to what we have seen in the Arcadian motif as all negative and associated with the rise of the National Socialist Party in Germany and Fascism—back to the land movement, vegetarianism, the organic movement and animal rights. We see him supporting what he considers rational and scientific views, for example, the earth being in existence for humans. Staudenmaier's opinion appears to be based on an imperial or utilitarian perspective. Others have criticised his views. For example, Robert Richards (2007), professor of science and history, points out that many people in biological disciplines and anthropology at that time had hierarchical views of race without being Nazi supporters. And while some of these rather Arcadian views may have influenced Nazi ideology, they have also influenced exclusionary ideology in the United States (Richards, 2007: 1-9). Richards, for example, cannot find any evidence of Haeckel being anti-Semitic or of him being a member of the right-wing Bavarian Thule society, as

Staudenmaier alleges (2007: 10-11). And Haeckel places Jews alongside German and Greco-Roman people as being at the pinnacle of his hierarchical schema (2007: 11). Similarly, Richards finds no evidence of Haeckel's views on evolution influencing Hitler, as these opinions were repudiated by Hitler, who made genetic and eugenic concerns central to his ideology (2007: 14). Hitler also valued dominating and using force to conquer other countries—hardly the values of Arcadian philosophy.

Although I do not see a link between environmental protection, particularly in its Arcadian form, and fascism, it should be noted that any orientation can go off course. We can observe this in the rise of invasion biology, which can also be linked to anti-immigrant views.

So, in New Zealand, we have the Green Party at the forefront of supporting 1080 use. The two major political parties, Labour and National, agree with 1080 use also. Only New Zealand First, a coalition partner with Labour in the last government, has opposed using 1080. But the New Zealand First party can be considered nationalist, economically conservative, environmentally unfriendly, anti-immigrant and xenophobic. However, the Green Party has spoken out more against racism in New Zealand than any other political group. Therefore, we could say no necessary connection exists between being environmentally concerned and being nationalist, anti-immigration and racist, at least in New Zealand.

²⁹ According to Coleman, 'biology' became a common term only in the early 19th century and became a label for a particular field of study in the early 20th century, even though areas of physiology covered part of the same field but focused mainly on medical concerns (1977: 1-4). Botany and zoology had already emerged as academic disciplines. They encompassed the area of study to which the term 'biology' was later applied (Coleman, 1977: 2). Before the 19th century, concerns that we would call 'biological' were examined in natural history. From our perspective, it is interesting that Coleman refers to the various views that emerged from these disciplines as 'doctrines' (1977: 8). Maybe to help us in our analysis, a helpful metaphor might be to consider the views of restoration ecology and invasion biology as doctrines.

³⁰ Callicott (1990) later dissociates himself from what he said was Leopold's idea of the land ethic—subordinating the individual to the whole. He even changes his mind as to what Leopold meant with his teaching of the land ethic. For a further analysis of these points, see Y. S. Lo (2001).

³¹ 'Death of the Disregarded' is a phrase taken from the title 'Unloved Others: Death of the Disregarded in the Time of Extinctions', in the Australian Humanities Review (2011), edited by Deborah Bird Rose and Tom van Dooren. While the animal predators we are dealing with in New Zealand are not in danger of extinction, they are unloved, disregarded, persecuted and poisoned in the interest of other, more charismatic animals.

³² The psychologist and philosopher Vinciane Despret, in her book *Thinking like a Rat*, and psychologist Oskar Pineño (2010), in his book *The Thinking Rat* (2009) criticise traditional behavioural experiments on rats in laboratories and suggest newer ways of understanding the life and thinking of a rat. These should be mandatory reading for modern conservationists.

³³ I am reminded of my fifth-form biology class, where we had to dissect a frog, which certainly did not endear me to the subject of biology. I am also reminded of the psychiatrist/psychoanalyst R. D. Laing's comment in describing his training at medical school: '*Then we kill a frog and put it through all sorts of numbers from smashing its head to cutting its head off and pithing its spine and seeing all the different parts twitch. Then you eventually cut it all up, into bits that are still twitching*' (Kirsner, 2013: 368). Laing regarded this practice as based on an 'instrumental' worldview that could be helpful in becoming a dentist, maybe, but not as a preparation for working with people as a psychiatrist, where empathy and compassion are needed. Similarly, I would question the instrumental view in conservation, which objectifies 'pests', poisons them, and then leaves them alone in the forest in their death agony so that we can show kindness to other desirable animals and work towards a more diverse environment.

At university, in developmental psychology, we learned about the experiments psychologist Martin Seligman conducted. He gave electric shocks to dogs, some of which the dogs could escape and others from which they could not escape. The dogs who could not get away gave up trying because they could do nothing to escape the shocks. Seligman's article described some dogs' reactions as running about frantically, defecating, urinating and howling when electrocuted (1972: 407). These reactions were not mentioned in the lecture I attended. Seligman's experiments showed how 'learned helplessness' or depression could develop when there is no way out of an unpleasant situation. Now, no counsellor or therapist would have to know about this experiment to understand the ideas behind 'learned helplessness'.

I heard about Seligman's work with dogs in a university lecture from a professor of psychology. There was no emotion when talking about the experiment, and no consideration was given to the ethics of conducting such an experiment. Since then, it has been reported that Seligman's work has helped psychologists in the CIA interrogate prisoners at Guantanamo Bay—see Maria Konnikova's article 'Trying to Cure Depression, But

Inspiring Torture' (2015) and Rebecca Gordon's article (2018). Seligman's ideas, influenced by Skinner's behaviourism, viewed humans as machines that could be programmed just like dogs. It is worrying that no one seems to know or care what happened to the 150 dogs involved in Seligman's experiments, as any helpful conclusion from the study was drawn from the results of their torture. The dogs seem to have been lost to sight and mind. I believe they were all killed. Perhaps the electric shocks had rendered them unusable for other experiments. 'What a pity', some experimenters might comment.

So, we see that what was part of the 'positive psychology' movement came from not very positive actions. Could we say the same about the use of poison by the Department of Conservation, that the resulting promise—a better environment—will, if it comes about at all, be brought about by much cruelty, so much so that some people might see the Department of Conservation as the Department of Cruelty.

³⁴ Details of the proceedings of one experiment were: *'Eleven possums were offered a lethal dose of 1080 at 06.30h. ... Tests were conducted on each possum, beginning approximately 1.5 hours after the bait was offered, and continuing about every 1.5h until death....Each test consisted of observations of gait, climbing ability, and responses to a series of stimuli. ... An observer approached and knelt over the possum, and an escape attempt or defence behaviour was scored as a positive response. ... Typical defence behaviours in possums include a glare, raised paw threat, bipedal threat, swipe, lunge or pounce'* (Littin, 2004: 59-60). I thought, when it was mentioned that the experimenter approached and knelt over the possum, they were going to say a prayer or console the possum (or even try to reverse the effect of the poison), like the woman animal activist in a bullfight in Spain who rushed into the arena on hearing the bull cry, to console the wounded bull (Duell, 2015). But this was not the case in the situation of the scientists in the study of possums. Here, we had only the impassive, objective stare of the experimenter.

³⁵ George Eliot, the author of *Middlemarch* (1871), comments on our ability to face suffering through one of the novel's main character's encounter with unexpectant suffering: *'If we had a keen vision and feeling of all ordinary human life, it would be like hearing the grass grow and the squirrel's heartbeat, and we should die of that roar which lies on the other side of silence. As it is, the quickest of us walk about well wadded with stupidity'* (Eliot, 2000:162). So, we cut ourselves off from the suffering of our fellow beings, and sometimes our own.

I remember when I first met my prospective PhD supervisor in anthropology and asked him for advice on what I should read. He replied, *Middlemarch* by George Eliot'. My supervisor was a leading professor of psychiatry and anthropology, yet the only book he recommended I read was a novel. We see, then, that science is not necessarily the only way to understand what is going on in the natural world—hearing the grass grow, hearing the squirrel's heartbeat or hearing the sighs of millions of animals in New Zealand's forests killed by 1080 might also help us.

Another simple but informative book about compassion and the understanding of animals is *Black Beauty* by Anna Sewell (1877). The novel centres on the life of Black Beauty, a horse, from the point of view of the horse. It is much more revealing about kindness and compassion, animal welfare issues and animals' ability to suffer than many experiments in the scientific laboratory. A few pearls of wisdom from the novel worth reflecting on are: 'They all think men can improve upon nature' (Chapter 10) and 'Is that pony made of flesh and blood?' (Chapter 11). This book should also be required reading for all those working with animals.

³⁶ I spoke to several vets about the humaneness or not of 1080 poison. One said, 'It is not a pleasant death'. Another vet said: 'We do know it is possible to be aware of having seizures (or at least when coming in and out of consciousness), and it is a profoundly unpleasant experience'.

³⁷ Looking at some of the work of various professionals with animals was sometimes troubling. Sometimes, I came across reports of 'professionals' conducting disturbing experiments on animals. For example, using different toxins to see differences in effects; drowning rats with water (salt or freshwater), cold or warm; conducting experiments to determine whether another rat would come to the aid of a half-drowned rat, etc. One could easily believe that there was some pathology present.

³⁸ It was my privilege to visit Battersea Park in 2019 and see the Brown Dog monument, which commemorated the Brown Dog and all those animals killed by vivisection. Along with a visit to the nearby Battersea Dog Home, I considered this visit a kind of pilgrimage to honour non-human animals. Perhaps a statue should be erected to commemorate all those animals killed by 1080 poison as a (secular) sacrifice for a better world based on reason, facts and objective science but not compassion.

³⁹ It is sometimes said that introduced predators have no place in New Zealand. However, as animal rights lawyer Nathan Winograd (2019) points out, those who believe that introduced predatory animals have no place in the country where they were introduced do not hold the same standards that they want to impose on these animals. He is speaking here about cats, seen as predators. He says that people who make statements about predators belong to a species known as a 'super-predator'. But these people do not force themselves to live exclusively indoors as they advocate cats should be doing. Nor do they pack their bags and return to the

continent where humans first evolved, nor do they stop killing and eating other living beings. Why then do we denigrate only certain predatory non-human animals that come from other countries?

⁴⁰ It would be interesting to know what Kiel makes of the Hebrew animal sacrificial system.

⁴¹ Much discussion about 1080 occurs on Facebook pages. Some sites are anti-1080 and others are pro-1080, each with dedicated advocates pushing for their position to be the correct one. The pro-1080 sites often present 'facts' in a simple way, as if they grew on trees. They do not seem content with a discussion but need the contributors to agree with their views. Many sites appear to merely repeat assertions to keep people committed to the paradigm involved in their beliefs. On pro-1080 sites, people are advised to look at the facts. Anyone who expresses a different opinion is treated with hostility and often ridiculed until they accept the view that the site proclaims. They remind me of the television advertisement where people sing the song 'What makes the world go round'. After hearing this repeatedly, I often found myself in the garden singing this song. On pro-1080 sites, it is as if the song is saying, 'What makes the world go round—1080 makes the world go round'. And after a while, many people start singing this song from the same hymn sheet.